Before the
Federal Communications Commission
Washington, D.C. 20554

In the matter of	)	
	)	
Amendment of Parts 73 and 74 of the	)	
Commission's Rules to Establish Rules for Digital	)	MB Docket No. 03-185
Low Power Television, Television Translator, and	)	
Television Booster Stations and to Amend Rules	)	
for Digital Class A Television Stations	)	
	)	

REPORT AND ORDER

Adopted: September 9, 2004 **Released: September 30, 2004**

By the Commission: Chairman Powell issuing a statement; Commissioners Copps and Adelstein approving in part, concurring in part and issuing separate statements.

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I. INTRODUCTION

1. With this *Report and Order*, we establish rules and policies for digital low power television ("LPTV") and television translator ("TV translator") stations and modify certain rules applicable to digital Class A TV stations ("Class A").[1] Our action establishes a regulatory framework consistent with our stated goals to hasten the transition of LPTV and TV translator stations to digital operations while minimizing disruption of existing service to consumers served by analog LPTV, TV translator and Class A stations. These stations are a valuable component of the nation's television system, delivering free over-the-air TV service, including locally produced programming, to millions of viewers in rural and discrete urban communities. We wish to facilitate, wherever possible, the digital transition of these stations, thereby enabling their viewers to realize the many benefits of digital broadcast television ("DTV") technology. The rules and policies adopted herein will provide flexible and affordable opportunities for digital LPTV and TV translator service, both through the conversion of existing analog service and, where spectrum is available, new digital stations. Licensees operating analog TV stations in the Class A service may also apply for a "companion" digital station in the LPTV service as a means of facilitating their digital transition. Our interference rules and methodology will provide spectrum for new digital stations without undermining established interference protection rights. We also address important issues such as the digital low power television transition, channel assignments, authorization of digital service, permissible service, mutually exclusive applications, protected service area, equipment and other technical and operational requirements.

[1] *See Amendment of Parts 73 and 74 of the Commission's Rules Concerning Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations*, 18 FCC Rcd 18365 (2003) (*Notice*). LPTV and TV translator stations are regulated under Subpart G of Part 74 of our rules. Class A stations are regulated under Subpart J of Part 73.

II. BACKGROUND

2. The Commission created the low power television service in 1982.[2] The low power television service consists of LPTV, TV translator, and television booster stations (referred to herein collectively as "low power television stations"). Stations in the low power television service are authorized with "secondary" frequency use status. These stations may not cause interference to, and must accept interference from, full-service television stations, certain land mobile radio operations and other primary services.[3] As the name suggests, low power television service stations have lower authorized power levels than full-service TV stations.[4] Unlike full-service stations, stations in the low power television service are not restricted to operating on a channel specified in a table of allotments.

3. *LPTV Stations.* The Commission created low power television stations to bring television service, including local service, to viewers "otherwise unserved or underserved" by existing service providers.[5] LPTV stations may originate programming and retransmit the programs of full-service television stations. Currently, there are approximately 2,128 licensed LPTV stations.[6] These stations operate in all 50 states and serve both rural and urban audiences.[7] Because they operate at reduced power levels, LPTV stations serve much smaller geographic regions than full-service stations, and they can provide service to areas where a higher power station cannot be accommodated in the TV and DTV Tables of Allotments. An LPTV station may be the only television station in an area providing local news, weather, and public affairs programming.[8] Even in some well-served markets, LPTV stations may provide the only local service to residents of discrete geographical communities within those markets.[9] Many LPTV stations air "niche" programming, often locally produced, to residents of specific ethnic, racial, or special interest communities.[10]

4. *Class A TV Stations.* In the Community Broadcasters Protection Act of 1999 ("CBPA"),[11] Congress directed the Commission to establish a Class A television service to provide a measure of primary status to certain LPTV stations so that those stations could continue to operate during and after the DTV transition. In order to qualify for Class A status, an LPTV station was required to have broadcast a

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[2] *See Report and Order*, 51 R.R.2d 476 (1982).

[3] *See, e.g.*, 47 C.F.R. §§ 74.703, 74.709, 90.303.

[4] LPTV stations may radiate up to 3 kilowatts of power for stations operating on the VHF band (*i.e.*, channels 2 through 13), and 150 kilowatts of power for stations operating on the UHF band (*i.e.*, channels 14 through 69). By comparison, full-service stations on VHF channels 7 through 13 radiate up to 316 kilowatts of power, and stations on the UHF channels radiate up to 5,000 kilowatts of power. LPTV signals typically extend approximately 15 to 20 miles, while the signals of full-service stations can reach as far as 60 to 80 miles.

[5] *See, e.g., Notice of Proposed Rule Making*, 45 F.R. 69178 (Oct. 17, 1980).

[6] *Public Notice*, Broadcast Station Totals as of March 31, 2004 (released April 27, 2004).

[7] *See Establishment of a Class A Television Service*, 15 FCC Rcd 6355 (2000) (*Class A Report and Order*), *on recon.*, 16 FCC Rcd 8244 (2001).

[8] *See Class A Report and Order*, 15 FCC Rcd at 6357, ¶ 2 (*citing Review of the Commission's Rules Governing the Low Power Television Service*, 9 FCC Rcd 2555 (1994) (*LPTV First Report and Order*).

[9] *Id.*

[10] *Id.*, *citing LPTV First Report and Order*, 9 FCC Rcd at 2555; *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, 11 FCC Rcd 10968, 10995 (1996).

[11] Pub. L. No. 106-113, 113 Stat. Appendix I at 1501A-594 - 1501A-598, codified at 47 U.S.C. § 336(f).

minimum of 18 hours per day and to broadcast an average of at least 3 hours of locally produced programming per week during the three month period preceding enactment of the CBPA. The CBPA directed that Class A licensees must be subject to the same license terms and renewal standards as full power television licensees, and that Class A licensees should be accorded primary status as television broadcasters as long as they continue to meet the requirements set forth in the statute. Class A TV stations are similar in many respects to LPTV stations; their operations are generally governed by the same technical standards. Unlike LPTV stations, Class A stations must comply with Part 73 regulations applicable to full-service TV broadcast stations, except for those that cannot apply for technical or other reasons. Class A stations also are afforded certain interference protection rights not available to LPTV stations. The Class A service rules (Part 73, Subpart J) also contain provisions for the operation of digital Class A TV stations. The Commission has licensed approximately 610 Class A stations.[12]

5. *TV Translator Stations.* A TV translator station is a low power television broadcast station that receives the signal of a television station and simultaneously retransmits it on another TV channel. Television translators are technically equivalent to LPTV stations in most respects and are licensed in the same manner.[13] Television translator stations are intended to provide service to areas where direct reception of full-service broadcast stations is unsatisfactory because of distance or intervening terrain obstructions. Although translators are not limited to operation within the contour of the station they rebroadcast, they may be used to provide "fill-in" service to terrain-obstructed areas within a full-service station's service area. There are approximately 4,737 licensed TV translators,[14] most operating in the western regions of the country. These stations are often used to deliver the only off-air television service available to rural communities.

6. LPTV and TV translator stations differ only in the amount of programming they may originate. LPTV stations are not limited in the amount of programming they may originate. TV translators may originate only emergency warnings of imminent danger and, in addition, not more than thirty-seconds per hour of public service announcements and material seeking and acknowledging financial support necessary to the continued operation of the station.[15]

7. *TV Booster Stations.* The regulatory provisions for television booster stations were adopted by the Commission in 1987.[16] TV booster stations are intended to provide fill-in service to areas within the predicted Grade B contours of full-service television stations. TV boosters simultaneously retransmit the programming of full-service TV stations and may be licensed only to licensees and permittees of full-service stations. TV boosters transmit on the same TV channel as that of the full-service station they rebroadcast and are permitted to broadcast only within the Grade B contour of the associated full-service station.

8. In the *Notice* in this proceeding we sought comment on a number of issues related to the DTV transition for LPTV and TV translators. We received numerous comments and reply comments in

[12] *Public Notice*, Broadcast Station Totals as of March 31, 2004 (released April 27, 2004).

[13] Licensees can switch between LPTV and TV translator designation by simple letter notification to the Commission. 47 C.F.R. § 74.732(e).

[14] *Public Notice*, Broadcast Station Totals as of March 31, 2004 (released April 27, 2004).

[15] 47 C.F.R. § 74.731(f).

[16] *See Amendment of Part 74 of the Commission's Rules Concerning FM Booster Stations and Television Booster Stations*, 2 FCC Rcd 4625 (1987).

response to the *Notice*.[17]

III. ISSUE ANALYSIS

A. Digital Station Classes in the Low Power Television Service

9. The *Notice* sought comment on whether we should continue to recognize a distinction between TV translator and LPTV stations when these stations operate digitally. Nearly all parties commenting on this issue favor retaining the distinction.[18] The National Translator Association, for example, states that TV translator and LPTV stations serve different purposes and, therefore, should be recognized as separate station classes with regard to digital operations.[19] We agree and expect that most translator licensees will focus their operations, at least initially, on rebroadcasting without altering the signals of DTV stations. We also believe the majority of LPTV licensees operating digital stations will do so in a manner similar to that of their analog stations, providing programming tailored to their communities. We note that certain statutory provisions distinguish between TV translator and LPTV station classes.[20] We disagree with a proposal to establish urban (primary status) and rural (secondary status) classes of digital low power service, demarcating these on the degree of spectrum crowding.[21] Based on our licensing experience, we disagree with a premise of this proposal that available spectrum is scarce only in metropolitan areas. Moreover, despite the urgings of several commenters, the *Notice* clearly stated that we will not address in this proceeding the "interference protection priorities, rights, and responsibilities of stations in the LPTV service, which are well established."[22]

10. For these reasons, we will adopt separate definitions and permissible use provisions for digital TV translator and LPTV stations.[23] As with analog stations, we will provide flexibility by permitting licensees to switch between digital translator and LPTV designations by letter notification to the Commission. Regulatory provisions in this *Report and Order* that do not explicitly refer to digital translator or LPTV stations will apply equally to both. The *Notice* also sought comment on whether we should establish in the low power television service a class of digital booster station. As discussed *infra*, we will not do so in this *Report and Order*, but may revisit issues involving the authorization and operation of boosters in a future proceeding.

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[17] Parties filing comments and reply comments and abbreviated name references for each are listed in Appendix A.

[18] *See, e.g.*, NTA Comments at 8 and Entravision Comments at 2. With very few exceptions, commenters not specifically focusing on this issue at least imply that there will be a regulatory distinction between digital TV translator and LPTV stations.

[19] NTA Comments at 8.

[20] *See*, for example, 47 U.S.C. § 614(c) and (h) regarding cable carriage of low power TV stations.

[21] *See* Joint Commenters Comments at 6.

[22] *Notice*, 18 FCC Rcd at 18382 and 19383, n. 80.

[23] Generally, we will pattern the distinction between digital TV translator and LPTV stations after that for analog translator and LPTV stations.

B. The Digital Transition for Low Power Television, Television Translator, and Class A Television Stations

11. A principal concern in this proceeding is the question of how the provisions for ending the transition to digital television set forth in Sections 309(j)(14)(A) and 336(f)(4) of the Communications Act apply to analog station authorizations in the LPTV, TV translator and Class A TV services. The determination of when LPTV, TV translator, and Class A licensees must cease operating their analog facilities may affect the success of their digital transition, as well as affect their continued analog TV operations.[24]

12. Section 309(j)(14)(A) of the Communications Act provides that the Commission may not renew a television broadcast license for "analog television service" for a period extending beyond December 31, 2006.[25] The term "analog television service" in Section 309(j)(14) is defined in Section 3 of the Communications Act[26] as "television service provided pursuant to the transmission standards prescribed by the Commission in Section 73.682(a) of its regulations," a rule that deals with full-service station transmission standards. In the *Notice* we sought comment on whether Section 309(j)(14)(A) applies to analog authorizations in the LPTV, TV translator, and Class A services.[27] Further, we considered Section 336(f)(4) of the Communications Act that is entitled "Issuances of Licenses for Advanced Television Services to Television Translator Stations and Qualifying Low-Power Television Stations." That Section provides:

> (4) ISSUANCE OF LICENSES FOR ADVANCED TELEVISION SERVICES TO TELEVISION TRANSLATOR STATIONS AND QUALIFYING LOW-POWER TELEVISION STATIONS. - The Commission is not required to issue any additional license for advanced television services to the licensee of a class A television station under this subsection, or to any licensee of any television translator station, but shall accept a license application for such services proposing facilities that will not cause interference to the service area of any other broadcast facility applied for, protected, permitted, or authorized on the date of filing of the advanced television application. Such new license or the original license of the applicant shall be forfeited after the end of the digital television service transition period, as determined by the Commission. A licensee of a low power television station or television translator station may, at the option of the licensee, elect to convert to the provision of advanced television services on its analog channel, but shall not be required to convert to digital until the end of such transition period. [28]

[24] *See* CBA Comments at 2; International Comments at 2.

[25] 47 U.S.C. § 309(j)(14).

[26] 47 U.S.C. § 153(49)(A).

[27] *Notice*, 18 FCC Rcd at 18409.

[28] *Notice*, 18 FCC Rcd at 18407 citing 47 U.S.C. § 336(f)(4).

We sought comment on the applicability of these provisions to Class A and TV translator stations and whether or not these extend to non-Class A LPTV stations.

13. We conclude that Sections 309(j)(14)(A) and 336(f)(4) ultimately compel LPTV, TV translator and Class A stations to convert to digital. As an integral component of the nation's television system, we believe that Congress intended LPTV, TV translator and Class A stations to transition to digital service, thereby permitting their viewers to realize the benefits of digital broadcast technology. We find the statute to be ambiguous, however, with respect to the transition deadline itself and conclude that under Section 336(f)(4) we have the discretion to set the date by which analog operations of stations in the low power and translator service must cease. The transition deadline established under 309(j)(14) – which prohibits authorizations for "analog television service" beyond December 31, 2006 – does not apply to LPTV and translator stations since neither is providing "analog television service" as that term is defined under the Act (*i.e.*, neither is subject to the transmission standards set forth in Section 73.682(a) of the Commission's Rules).[29] Accordingly, Section 336(f)(4) is best read to allow the transition period for these stations to end "as determined by the Commission."

14. With respect to Class A stations, we recognize that an argument can be made that Class A stations are subject to the deadline in 309(j)(14) given they arguably provide "analog television service" since they are subject to the transmission standards set forth in Section 73.682(a) of the Commission's Rules.[30] Nonetheless, we believe the better reading of the statute is that the 309(j)(14) deadline does not apply to Class A stations, but rather such stations are subject to the transition language in 336(f)(4) which specifically allows the Commission to determine the end of the Class A transition period. Setting a digital transition date for LPTV, TV translator, and Class A stations that is sufficiently after the transition for full-service stations is also consistent with the principles underlying the applicable statutory provisions. It is unlikely that Congress had Class A stations in mind when enacting Section 309(j)(14). Section 309(j) was enacted as part of the Balanced Budget Act of 1997; the Class A television service was created two years later in the Community Broadcasters Protection Act of 1999. Section 309(j)(14) arguably applies only because 336(f)(2) requires Class A stations to comply with the whole panoply of operating rules for full-service stations. In contrast, Section 336(f)(4) specifically deals with the transition period for Class A stations. As part of the 1999 Act, Congress adopted Section 336(f)(4), which expressly gives the Commission the discretion to determine the end of the transition period for Class A, TV translator, and LPTV stations. The apparent intent behind Section 336(f)(4) was to ensure that these stations are not required to prematurely convert to digital operations in a manner that could disrupt their analog service or, more importantly, that might cause them to cease operations Thus, Section 336(f)(4) does not appear to hold Class A stations to the full-service transition deadline.

15. We find that interpreting the statute as giving the Commission the discretion to establish a date for the transition of non-full-service stations "after the end" of the full-service station transition period is additionally supported by a consideration of the mechanics of how the substitution of digital for analog stations in these services must, of necessity, take place unless the service they provide to the public is to be severely interrupted. We adopted an approach for the transition of full-service TV stations that has permitted viewers to continue using their existing TV sets to receive analog programming while the number of DTV service offerings grows and consumers gradually become equipped to receive them. To achieve this purpose, we awarded full-service stations a second channel for digital operations during a multi-year transition period. However, lacking sufficient spectrum, we were unable to award second channels to TV translator, LPTV, or Class A stations to facilitate their digital transition. Indeed, we do not

[29] 47 U.S.C. §§ 153(49); 309(j)(14)(A); 47 C.F.R. 73.682(a).

[30] *See* 47 C.F.R. § 73.6024(a).

expect spectrum for new low power digital operations, as "companion" channels for existing analog programming services, to become available until TV channels are surrendered by full-service stations at the end of the full-service DTV transition period. Moreover, until this *Report and Order*, our low power television service rules have not provided for digital operations.

16. Requiring LPTV, TV translator, and Class A stations to comply with the full-service DTV transition deadline would, therefore, force these stations to "flash-cut" to digital on the channels authorized for their existing analog operations (*i.e.*, cease analog transmissions and begin operation of new digital transmitting equipment on the same date). We are concerned that such a requirement would significantly disrupt the existing service of many of these stations because it is likely that a large number of their viewers may be unequipped to receive DTV signals off-air at that time.[31] Moreover, because they do not have the benefit of cable "must carry" rules, many low power stations do not receive the benefit of being carried on local cable or satellite systems. Thus, unlike full-service TV stations, loss of service due to the termination of a station's analog operation would not be offset by cable carriage of the station's DTV channel or the digital-to-analog conversion of the station's programming. Of even greater concern, some stations might be forced to discontinue service altogether, leaving their viewers without local TV service or, in some cases, without over-the-air television service.

17. We conclude that the better, less disruptive, approach would be for the low power television digital transition to be completed at some fixed time after the deadline for full-service television stations. We expect that completion of the full-service transition will result in the return of a sufficient number of channels to permit most LPTV, TV translator, and Class A stations an opportunity to operate dual analog and digital operations for some period of time, thereby creating an incentive and opportunity for their viewers to transition to digital service without loss of their existing analog service.

18. Permitting LPTV, TV translators, and Class A stations to continue analog operation on a secondary basis beyond the full-service digital transition deadline will not in any way slow or otherwise detract full-service stations' ability to complete the DTV transition. Full-service stations will still be required to return one of their channels on schedule irrespective of whatever deadline we shall ultimately set for the low power television and Class A digital conversion. In addition, a later digital conversion for these stations will not adversely affect new commercial and public safety services in the 700 MHz band.[32] As discussed below, all digital TV translator and LPTV stations will be licensed on a secondary non-interfering basis to 700 MHz commercial and public safety licensees. Thus, there will be no harm to the new 700 MHz licensees in this band, who will have primary status.

19. Fox Television Stations, Inc., and Fox Broadcasting Company (Fox) argue that the December 31, 2006, deadline should apply to all analog broadcasting, including low power, and that "Congress would not have desired to leave a small group of television stations perpetually operating in a

[31] For example, many translator-served communities cannot directly receive any off-air signals of DTV stations because of intervening terrain. We are concerned that viewers in such communities will not become equipped to receive DTV signals until after their translators begin to transmit digital signals. Without continued analog service, these viewers will experience a disruption in service, at least until they secure a digital-to-analog converter or this conversion is made at the translator station(s). *See* NTA Reply Comments at 21-22 ("To suddenly 'flash cut' in rural areas means that the entire rural United States must suddenly develop overnight digital reception capability"). *See also* CBA Comments at 13; Island Comments at 5.

[32] Pursuant to Section 336(e) of the Act, LPTV and TV translator stations must vacate the use of the upper 700 MHz band (channels 60-69) by the end of the full-service DTV transition (*i.e.*, by December 31, 2006, or as extended on the basis of the criteria in Section 309(j)(14)(B) of the Act). 47 U.S.C. § 336(e).

legacy technology – which would only serve to discourage the digital transition in rural areas."[33] We disagree. It is not our intention to allow LPTV, TV translator, and Class A broadcasters to permanently operate their analog facilities. Indeed, we seek to hasten their transition to digital service and will work toward the goal of achieving an end-date at, or soon after, the end date of the full-service transition. However, until we have resolved certain issues for full-service stations and more closely approach the end of the full-service DTV transition, we cannot establish a fixed termination date for the low power digital television transition when LPTV, TV translator, and Class A stations will be required to cease analog transmissions. It would be irrational and arbitrary to choose such a deadline for these stations at this point, given the remaining uncertainties relating to the full-service DTV transition. We will continue to monitor developments in the DTV transition and the LPTV, TV translator, and Class A marketplace. In our third DTV periodic review proceeding, we will revisit this issue and consider establishing a deadline and/or other criteria for the digital conversion of LPTV, TV translator, and Class A stations.[34]

C. Permissible Service

20. In practice, TV translators primarily deliver the programming of TV broadcast stations to communities that cannot receive these signals directly because of distance or terrain. Although LPTV stations may rebroadcast TV signals, most air locally produced and/or other programming not otherwise available in their communities. We seek to preserve in the digital world the important and complementary services provided by TV translator and LPTV stations.

1. Digital TV Translator Stations

21. In the *Notice* we proposed that a digital TV translator station operate for the purpose of rebroadcasting the programs and signals of DTV stations. We tentatively concluded that a digital translator be technically capable of rebroadcasting the entire DTV input signal, producing an output signal that can be satisfactorily viewed on consumer receiving equipment designed for our DTV transmission standard. The *Notice* sought comment on how we should define a digital TV translator in our rules and on the following permissible service issues: (1) the technical mode(s) of digital operation; (2) the extent and nature of translator-inserted local messages; (3) the extent to which a digital translator may alter a DTV broadcast signal; and (4) the permissible sources of digital translator input signals.

22. *Definition and Digital TV Translator Rebroadcasts:* Although to a limited extent we will permit a digital translator to insert local messages and otherwise alter the DTV broadcast signal being retransmitted, we will define a digital TV translator station as follows:

> *Digital television broadcast translator station.* A station operated for the purpose of retransmitting the programs and signals of a digital television ("DTV") broadcast station, without significantly altering any characteristic of the original signal other than its frequency and amplitude, for the purpose of providing DTV reception to the general public.[35]

[33] Fox Comments at 8-9.

[34] Our second periodic review *Notice of Proposed Rulemaking* considers DTV market definitions in connection with the statutory criteria for extending the transition date. *See Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, 18 FCC Rcd 1303 (2003) ("Second DTV Periodic NPRM"). Our future consideration of digital transition criteria for TV translator, LPTV, and Class A stations may include separate market definitions tailored to the service of these stations.

[35] *Cf.* 47 C.F.R. § 74.701(a) (analog counterpart definition).

Parties commenting on the definition generally support defining a digital TV translator station in this manner.[36] This definition best reflects the identity and fundamental purpose of a TV translator station. Although, as noted below, a few commenters propose that digital translator licensees be afforded a degree of flexibility to alter the signal of a DTV station, we will not, except for the limited provisions adopted herein, permit a station licensed as a digital TV translator to alter the input DTV broadcast signal. However, subject to the consent of a DTV broadcast station, we will permit a digital LPTV station to engage in operations that include both retransmission of the DTV broadcast station and the transmission of non broadcast-related programming or services.[37]

23. *Digital Transmission Mode*: The *Notice* sought comment on two basic modes of digital translator operation (*i.e.*, the technical means by which a TV translator receives an input signal on a TV channel, processes the signal information and transfers it to another TV channel for transmission): (1) heterodyne frequency conversion and (2) a "regenerative" mode. The heterodyne translator is a "pass through" device that typically performs two internal frequency conversions to shift the input signal information to the FCC-authorized output channel for final amplification, out-of-band emission filtering, and transmission.[38] The dual-conversion heterodyne translator is widely used in analog TV translator installations.[39] Heterodyne processors have been developed for digital translator operation.[40]

24. The regenerative mode incorporates technology developed specifically for digital TV translators. The regenerative digital translator employs a complete DTV receiver/processor that demodulates and decodes the input 8-VSB signal and performs "equalization" and "forward error correction" on the signal information to correct signal propagation impairments (*e.g.*, multipath distortion) and bit errors. "As long as the impairment and interference effects do not cause the DTV receiver to extend beyond the point of threshold of visible (TOV) errors, the output MPEG-transport stream is regenerated to the exact same data stream that was transmitted from the full-service station."[41] Thus, unlike a simple heterodyne translator which passes through signal errors in the received input signal – including, if input filtering is not present, unwanted interfering signal energy in the adjacent channels - the regenerative translator removes signal errors, distortion and interference and is capable of producing an output signal with a digital bit stream essentially the same as that transmitted by the DTV station.

25. The *Notice* suggested that both transmission modes could serve a useful purpose.[42] Due to its somewhat lower cost, heterodyne digital translators might be preferred, for example, in "single-hop"

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[36] *E.g.*, Elko Comments at 3; Entravision Comments at 2; Fox Comments at 3; MSTV/NAB Comments at 22; NTA Comments at 3; Riverton Comments at 6.

[37] Stations may not "rebroadcast the program or any part thereof of another broadcasting station without the express authority of the originating station." 47 U.S.C. § 325(a).

[38] More specifically, a heterodyne translator mixes the incoming RF frequencies of the input signal with frequencies generated by a tuned local oscillator to generate an IF frequency (such as 44 MHz) that is passed through a band pass filter and "upconverted" by the same process to the final RF output channel for amplification. *See* Gary Sgrignoli Reply Comments at 3.

[39] AFCCE Comments at 1. AFCCE estimates that 90% of existing translators operate in the heterodyne mode. The remaining analog translators employ modulation/demodulation equipment, for example, to receive signals transported via FM microwave.

[40] Riverton Comments at 4.

[41] Gary Sgrignoli Reply Comments at 3.

[42] *Notice*, 18 FCC Rcd at 18372-3.

installations serving isolated communities, while the regenerative translator would be better suited for multi-hop translator networks. The *Notice* asked if there is a purpose for heterodyne digital translators, if we should prefer the use of regenerative translators, and whether we should permit translator operators to choose their transmission mode based on individual circumstances.[43]

26. The majority of commenters propose that we permit both modes of digital translator operation.[44] The Association of Federal Communications Consulting Engineers (AFCCE) asserts that heterodyne translators, equipped with suitable emission mask filters, would perform adequately in most single-hop systems, and it fears that requiring use of regenerative technology could create an unnecessary financial burden on translator operators.[45] Riverton Freemont TV Club (Riverton), a translator licensee, maintains that existing analog heterodyne translators could be suitably modified for digital operation with the addition of an 8-VSB signal processor or a "regenerator" and the required mask filter.[46] Other commenters urge that we adopt only the regenerative mode and/or limit the use of heterodyne processors.[47]

27. The record evidences the superior performance of the regenerative transmission mode with regard to in-band signal quality, adjacent channel performance, and digital signal coverage, especially in those areas severely affected by multipath signal impairments. The regenerative mode will therefore expand opportunities for co-sited adjacent channel operations. The independence of translator input and output signals removes concerns relating to adjacent channel interference signals and noise, and enables more reliable attenuation of out-of-band spurious emissions. Regenerative technology will also facilitate monitoring of such transmission parameters as digital average power and in-band signal-to-noise ratio. For these reasons, we express a strong preference for and encourage, wherever possible, the use of the regenerative transmission mode.

28. We will also, however, permit heterodyne digital signal retransmissions but, as recommended by NTA, limit the digital output power of UHF heterodyne translators to 30 watts and VHF heterodyne translators to 3 watts.[48] Under this approach, we believe most translator operators will be permitted the flexibility to choose their mode of transmission based on individual circumstances. A large majority of analog translator stations operate with UHF and VHF transmitter output power levels not exceeding 100 watts and 10 watts, respectively. Generally the equivalent digital average power of such stations would

[43] *Id.*

[44] *E.g.*, APTS/PBS Comments at 13; Elko Comments at 2; Entravision Comments at 4; KAET Comments at 9; MSTV/NAB Comments at 22; Vermont Educational Comments at 5; Wyoming Comments at 2.

[45] AFCCE Comments at 1.

[46] Riverton Comments at 4.

[47] NTA Comments at 5-6 (recommending that we adopt the regenerative mode for "normal practice" and generally require its use for all translators operating with a digital average transmitter output power of more than 30 watts); Zenith Reply Comments at 2 (arguing that transmitted signals using the regenerative mode are "far superior" to those transmitted by a heterodyne translator); Parsons Reply Comments at 2 (suggesting that heterodyne processors should be permitted in cases of economic hardship on a waiver basis and only in remote rural areas); Larcan Reply Comments at 1 ("There is a general agreement [in the public record] that regenerating the bit stream is worthwhile if economically feasible."); Sgrignoli Reply Comments at 4 (suggesting that we "limit the use of heterodyne units to cases where there are no adjacent channels at the translator input and encourage the 'preferred' use of digital regenerators wherever possible, especially during the frequency-congested transition era").

[48] Although NTA did not differentiate between UHF and VHF power limits, we believe NTA intended the 30-watt limit to apply to UHF stations. The VHF power limit of 3 watts is based on the approximate 10 dB difference between VHF and UHF station power levels to obtain comparable signal coverage.

not exceed the 30 watt or 3 watt limitations.[49] Thus, operators of most translator stations could consider modifying their existing analog equipment for digital operation. The 30-watt UHF and 3-watt VHF output power caps on digital heterodyne translators will help to alleviate concerns about the adjacent channel interference potential of these devices, particularly with regard to translator installations involving co-sited first channel adjacent operation.

29. NTA asks finally that we permit a third transmission mode in which a digital translator employs modulation equipment (*e.g.*, in connection with translator rebroadcasts of incoming signals delivered by microwave or translator insertions).[50] Our rules permit analog translator stations to employ modulation equipment and we will also permit its use for digital translator operations in connection with signal transport and local message insertion.[51]

30. *Local Message Insertions*: The *Notice* sought comment on the merits of permitting licensees to insert local messages into the digital translator output channel. It specifically asked for comment on the duration and nature of local messages and the technical feasibility and cost of translator insertions into the digital bit stream.[52]

31. Television translators have played a unique role in delivering over-the-air programming of TV broadcast stations to many communities otherwise unable to receive such service, and we want this service to continue in the digital age. For this reason, we are preserving the separate identity of digital TV translator stations and their traditional TV rebroadcast role. We also wish to preserve the opportunity for translator operators to insert, on a limited basis, messages of importance to their communities. Accordingly, we will extend to digital operations the provisions for analog translator local message origination. Specifically, we will permit a digital TV translator station to originate emergency warnings deemed necessary to protect and safeguard life and property. We will also permit a digital TV translator to originate local public service announcements or messages seeking or acknowledging financial support necessary for its continued operation, not to exceed 30 seconds per hour.[53]

32. Commenters generally support these provisions.[54] According to noncommercial educational TV station KAET, "[I]t is critically important for local communities to be made aware of local weather and other emergencies as well as school closings and other local bulletins."[55] Vermont Educational Television also emphasizes the crucial importance of emergency warnings, noting that one of its translators serves a

[49] A "digital average" power approximately 6 dB less than a "peak of sync NTSC" power will dissipate the same thermal power is a load resistor. A digital average power level approximately 12 dB less than an NTSC peak power will produce comparable signal coverage.

[50] NTA Comments at 6.

[51] *See* 47 C.F.R. § 74.731.

[52] *Notice*, 18 FCC Rcd at 18373.

[53] Cf. 47 C.F.R. § 74.731(f) (analog operations). Although equipment is available to insert messages into a digital bit stream, it may not be affordable for most translator licensees, and digital message insertion may not be practical at this time. *See, e.g.*, Greg Best Comments at 2; Larcan Comments at 1. Yet, we recognize the potential importance of locally generated messages, especially vital emergency warnings and, therefore, we will provide in our rules for limited digital translator message origination.

[54] *See, e.g.*, Elko Comments at 3; Entravision Comments at 2; Fox Comments at 3; KAET Comments at 6; MSTV/NAB Comments at 22; NTA Comments at 6; Vermont Educational Comments at 4.

[55] KAET Comments at 6.

community located near a nuclear power plant.[56] We also agree with Fox that digital translators should also be permitted, if necessary, to modify the PSIP information of a DTV signal only to allow proper tuning by consumer DTV receiver products and will permit such DTV input signal modifications (*See* Section H, *infra*).[57]

33. The record does not contain information related to technical standards for digital translator message origination, and we will not prescribe such standards in this proceeding. Rather, we will permit any means of translator message insertion that is mutually acceptable to a translator operator and the licensee of its primary DTV broadcast station (*e.g.*, originating signals that replace a DTV signal or those that are inserted into the bit stream of the DTV signal). Signals containing local messages must comply with our power and emission requirements, not cause destructive interference, and should be capable of being satisfactorily received by DTV products designed for the Commission's DTV transmission standard.

34. *Other DTV Broadcast Signal Alterations*: We requested comment on whether a digital TV translator should be permitted additional flexibility to alter the content or video format of a DTV broadcast signal, given the consent of the DTV broadcast licensee.[58] We asked if translator rebroadcasts could exclude portions of a DTV signal related to ancillary and supplementary services and whether translator licensees should be permitted to offer local ancillary and supplementary services, including services on a subscription basis. We inquired about the merits, technical feasibility and cost of digital translator multi-cast operations, whereby a translator licensee would arrange with broadcast licensees to rebroadcast the programs of two or more DTV stations on the same translator output channel.

35. Some parties request that translators be given the same flexibility as parent stations to provide ancillary and supplementary services. For example, APTS/PBS believes ancillary and supplementary services would provide compelling public interest benefits and gives examples of the types of services that public TV stations are planning, including the delivery of broadband services.[59] Vermont Educational Television states that a digital translator can serve the current role of rebroadcasting the programming of full-service stations while also having the technical capability to provide unique local services to the public in areas not reached by full-service stations' signals.[60] KAET seeks "regulatory flexibility" to use the "excess digital capacity" of its translator - that remaining after rebroadcast of its primary KAET signal - to offer tailored educational programs.[61]

36. Other commenters oppose permitting digital translators the flexibility to alter DTV signals. MSTV/NAB submits that digital TV translators should "seamlessly pass through all the bits of the parent station without degradation, subject to the limited local insertion exceptions set forth in the existing analog

[56] Vermont Educational Television Comments at 4.

[57] Fox Comments at 3. PSIP is the acronym for Program and System Information Protocol.

[58] *Notice*, 18 FCC Rcd at 18373.

[59] APTS/PBS Comments at 10-11. Examples include dissemination of financial stock exchange information, election returns, subscriber-based weather updates, college courses, and transmissions that could enhance public safety.

[60] Vermont Educational Television at 2.

[61] KAET Comments at 5. KAET maintains that digital translators should be permitted to make DTV signal alterations necessary to accommodate translator-provided originations, including down converting a high definition signal to a standard definition signal.

rules."[62]

37. Several commenters support digital translator multiplexing ("multi-casting") of the programming of two or more DTV broadcast stations on the translator output channel, subject to special arrangements with the DTV station licensees; no commenter provided information on the technical feasibility or cost of such translator operations.[63] Bonneville comments on how multi-casting could offer a spectrally efficient and cost effective option for digital translator service:

> "In areas of high translator congestion, operators could realize spectrum efficiencies by sharing spectrum to provide more than one DTV signal over a single channel. The costs associated with the transition to digital for these stations would consequently not burden a lone operator, but instead be borne by the multiple operators sharing the digital channel."[64]

MSTV/NAB supports use of digital translator multi-casting with the consent of the involved DTV broadcast licensees, but only for the duration of the DTV transition. According to MSTV/NAB, multi-casting could be beneficial in areas where it may be too expensive for broadcasters to build separate translators. It also suggests that during the transition there may be rural areas without enough translators to serve all parent stations (*e.g.*, due to translator displacement resulting from the repacking of the DTV core spectrum) and that multi-casting could help compensate for a temporary shortage of translators.[65] NTA believes multi-casting could serve a useful purpose provided the necessary equipment becomes affordable. It recommends that we permit a "mixture" of the signals of analog and digital primary stations to be multiplexed together in the translator output signal and that the embedded programs be encoded with at least a standard definition format.[66] In opposition, Fox submits that consideration of multi-casting at this time would be premature and that digital translators should be required to pass through the entire DTV signal, at least during the transition period. Fox is concerned that to permit other arrangements could result in viewers not realizing the full benefits of digital television, particularly high definition programming.[67]

38. Consistent with the fundamental purpose of the TV translator, we will generally not permit digital translators to alter the content or format of DTV broadcast signals, other than for limited local origination of the kinds of messages described above. We agree that the types of locally tailored ancillary and supplementary services suggested by APTS/PBS, KAET and Vermont Educational would benefit translator-served communities. We will permit such services under the definition of a digital low power television station. Thus, a digital LPTV station that rebroadcasts the signal of a DTV broadcast station, may, with the consent of a DTV station licensee, supercede or alter that station's signal to locally originate other services, including ancillary and supplementary services (and will be subject to the requirement that they pay a 5% fee on gross revenues of feeable service). This distinction preserves the identity of a television translator station, while also enabling the flexibility sought by APTS/PBS and other

[62] MSTV/NAB Comments at 22; *see also* Elko Comments at 3; Fox Comments at 3; Riverton Comments at 6; NTA Comments at 6.

[63] *See, e.g.*, Bonneville Comments at 5; Cavalier Comments at 16; Entravision Comments at 3; Greg Best Comments at 2; KAET Comments at 5; MSTV/NAB Reply Comments at 13; NTA Comments at 4 and 7.

[64] Bonneville Comments at 5.

[65] MSTV/NAB Reply Comments at 13.

[66] NTA Comments at 4 and 7.

[67] Fox Comments at 3.

commenters.[68]

39. Because of technical complexity and related equipment costs, we do not believe it likely that many digital translator operators will multiplex the program signals of multiple DTV broadcast stations. Yet, we will permit such operations, subject to arrangements with and the consent of all involved DTV station licensees. As requested by NTA, we will permit the multiplexing of a mixture of the program signals of analog TV and DTV stations, but we will not require a minimum video format for the programs embedded in the translator output signal. We believe that the parties to such arrangements will want to provide the best practicable digital service. We expect only that translator output signal be satisfactorily viewable on consumer receiver products designed for the Commission's DTV transmission (8-VSB) standard. We will monitor the use of digital translator signal multi-casting and may revisit in a future periodic review the issue of its post-transition use.

40. *Digital to Analog Signal Conversion*: In the *Notice* we sought comment on whether translators should be permitted to rebroadcast a DTV signal in the analog transmission format and how that issue relates to the definition of a digital TV translator station.[69] We also asked if we should permit translators to rebroadcast an analog input signal as a digital output signal.[70]

41. Most parties commenting on the digital-to-analog conversion issue support permitting translators to operate in this manner.[71] We agree that permitting translators to convert DTV signals for analog rebroadcasts would serve a useful purpose. As noted by Entravision, analog conversion would permit viewers to continue to receive the programs of TV broadcast stations that switch to digital-only operation.[72] We do not believe that allowing analog conversion of DTV signals would prolong the DTV transition. On the contrary, it could facilitate the transition by "allow[ing] rural translator operators that may encounter difficulty in making the transition to digital operations to continue providing free-over-the-air service to viewers in remote areas throughout the DTV transition and at its end -- once full-service stations being rebroadcast return analog channels and broadcast only digital signal."[73] This mode of operation would also permit translators to transmit the programs of DTV broadcasters until sufficient DTV set penetration levels exist to warrant translator licensees to convert their analog channels to digital operation. Digital to analog conversion may also enable translator-served communities to experience a significant signal quality improvement. According to Gary Sgrignoli, "[T]echnology is mature for the conversion of digital MPEG streams to analog NTSC outputs in affordable commercial equipment."[74] For these reasons, we will permit TV translators and LPTV stations to convert a DTV input signal to an output channel in the analog (NTSC) format and to do so without Commission authorization or notification.

42. In this regard, NTA asks us to adopt the following provision in our rules:

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[68] *See* Joint Commenters Comments at 3.

[69] *Notice*, 18 FCC Rcd at 18370.

[70] *Id.* at 18374.

[71] *See, e.g.*, Bonneville Comments at 4; Joint Commenters Comments at 4; MSTV/NAB Comments at 23; NTA Comments at 3; Wyoming Comments at 2.

[72] Entravision Comments at 3.

[73] Bonneville Comments at 4.

[74] Gary Sgrignoli Comments at 3. *See* also Parsons Comments at 8. Significant improvements to signal parameters such as the translator in-band signal-to-noise ratio, would result from the signal and data processing capabilities of the front-end DTV receiver/processor in such translator installations, particularly improving signal reception in multi-hop translator systems.

> "If the programs of the analog station are continuously included in the signal of the companion digital primary station, then the input for the analog translator may be derived from this source."[75]

Although we agree with the operational flexibility sought by NTA, the suggested language would prevent a translator from converting to the analog format the signal of a station with DTV-only operation, which will be the case for all full-service broadcast stations upon completion of the DTV transition. We will, therefore, expand the NTA's proposed rule to permit the rebroadcast of a DTV input signal as an analog output until such time as translators are required to transmit only digital signals.

43. NTA asks that we permit digital TV translators to rebroadcast the signals of analog TV broadcast stations, thereby allowing "maximum flexibility" to bring digital TV service to rural areas.[76] Such a conversion would necessitate use of the regenerative translator technology and would therefore result in a significantly improved translator output signal during the DTV transition. Although we expect this mode of operation will occur infrequently, we will permit it.

44. *Digital LPTV and Translator Input Signal Sources*: In the *Notice* we proposed to allow digital TV translators to receive broadcast signals using any of the signal delivery means available to analog TV translator stations.[77] All parties commenting on this issue support this proposal, and we will adopt it.[78] We agree that permitting alternate signal delivery means will facilitate efficient spectrum use and could significantly benefit the digital conversion of TV translators in frequency congested areas.[79] We will therefore extend all provisions in the relevant rule for analog LPTV and TV translator signal inputs to include their digital operations.[80]

2. Digital Low Power Television Stations

45. The *Notice* sought comment on the definition of a digital low power TV station and the types of services we should require and permit for these stations.[81] We noted that LPTV stations are defined as stations that may retransmit the programs of full-service TV broadcast stations, originate programming in any amount greater than 30 seconds per hour and offer subscription television service.[82] We tentatively concluded that digital LPTV stations should be subject to the same minimum video program service requirement applicable to DTV broadcast and digital Class A TV stations.[83] Specifically, a digital LPTV

[75] NTA Comments at 3.

[76] *See* NTA Comments at 6; Entravision Comments at 3.

[77] *Notice*, 18 FCC Rcd 18374.

[78] APTS/PBS Comments at 13; Bonneville Comments at 6; Entravision Comments at 4; Greg Best Comments at 2; MSTV/NAB Comments at 23; NTA Comments at 7; San Bernardino County Comments at 9.

[79] *See* Sgrignoli Reply Comments at 4 (*e.g.*, noting that four 6 MHz 8-VSB signals can be embedded in a broadcast auxiliary microwave channel of 25 MHz bandwidth).

[80] *See* 47 C.F.R. § 74.731(b), which lists permissible alternative translator input sources including another translator, television translator relay, intercity relay, television STL, "or other suitable source such as a CARS or common carrier microwave relay..." and specifies methods of signal transmission. Note also that the microwave bands in the TV broadcast auxiliary service (Subpart F of Part 74) may be used for digital transmissions with any available signal modulation format.

[81] *Notice*, 18 FCC Rcd at 18374.

[82] *See* 47 C.F.R. §§ 74.701(f) and 74.731(g).

[83] *Notice*, 18 FCC Rcd at 18375.

station would be required to provide a free video programming service of at least NTSC (analog TV) quality, intended for reception by the general public. Upon meeting that requirement, we tentatively concluded that digital LPTV stations should be permitted the same flexibility to offer ancillary and supplementary services, including subscription services, allowed for DTV and digital Class A stations, including arrangements with outside parties to offer such services in the manner provided in our DTV rules.[84] We sought comment on what circumstances, if any, should exempt a digital LPTV station from the minimum video program service requirement and enable it to use the entire digital bit stream for providing ancillary and supplementary services (*e.g.*, station operations between 12:00 a.m. and 6:00 a.m.). Finally, we proposed to apply to digital LPTV stations the public interest-related obligations applicable to analog LPTV stations and asked if there is any basis for treating digital and analog LPTV stations differently in this regard.

46. *Definition*: Commenters did not explicitly address the definition of a digital LPTV station, but did so implicitly in terms of the required and permitted services of such stations.[85] Nonetheless, building on the definition in our rules for a low power television station,[86] we will define a digital low power TV station as follows:

> *Digital low power TV station*: A station authorized under the provisions of this subpart that may retransmit the programs and signals of a digital television (DTV) broadcast station, may originate programming in any amount greater than 30 seconds per hour for the purpose providing DTV reception to the general public and, subject to a minimum video program service requirement, may offer services of an ancillary or supplementary nature, including subscription-based services. (See § 74.790 of this part).

47. *Required Digital Service*: In the *Notice* we tentatively concluded that a digital low power TV station should be subject to the minimum video program service applicable to DTV broadcast and digital Class A TV stations.[87] Under this provision, the transmissions of digital LPTV stations would be required to include a free video programming service of at least analog (NTSC) TV technical quality, intended for over-the-air reception by the general public. This provision has three significant elements: (1) the video program service need not occupy the entire 19.38 Mbit/sec information-bearing capacity of a DTV signal, only enough to provide video resolution comparable to an NTSC TV video image – a relatively small portion of the overall bit capacity; (2) the service must be offered free of charge to viewers; and (3) the signal on which the video program service is carried must be intended for reception by the general public – meaning that the digital signal must be transmitted in a form that can be viewed with receiver products developed for our universal DTV transmission standard (*i.e.*, the ATSC standard incorporating the 8-VSB modulation format).

48. Several Class A and LPTV licensees urge us not to impose such a requirement, but rather to allow licensees maximum flexibility to provide new digital services to the public.[88] Moreover, Island

[84] *Id.*

[85] *See, e.g.*, CBA Comments at 17 (CBA believes that the statutory definition of broadcasting could be satisfied by requiring only that a signal be distributed without a fee to any member of the public who wishes to receive it).

[86] 47 C.F.R. § 74.701(f).

[87] *See* 47 C.F.R. §§ 73.624(b) [DTV requirement] and 73.6026 [Digital Class A TV requirement].

[88] *See, e.g.*, Cherryland Wireless Comments at 2 (requesting that digital LPTV stations be initially allowed to provide a high speed downstream datacasting service); Bruno Comments at 6 (arguing that LPTV stations should be (continued....)

states that many LPTV licensees now face serious economic difficulties and submits that a minimum program service requirement, together with an 8VSB modulation requirement could "seriously jeopardize their continued viability, and possibly result in their ultimate demise."[89] According to Commercial, "the degree of operational freedom" afforded to licensees, whose stations generally have limited signal coverage and lack cable and satellite carriage, will affect their willingness to invest in digital services.[90]

49. KM argues that enforcing a minimum video program service requirement on LPTV stations would be contrary to the decision of the United States Court of Appeals for the District of Columbia Circuit in *Motion Picture Association of America, Inc., et al v. FCC.*[91] In that case, the court held that Section 1 of the Communications Act "does not otherwise authorize the FCC to regulate program content."[92] Because the video description rules at issue in the case involved program content, the court vacated the Commission's video description requirements. In this case, however, our minimum video program service requirement is not related to content. LPTV broadcasters are free to air the content they choose on their stations. The minimum video program service requirement merely is an operational rule pertaining to how television broadcasters use their licensed digital spectrum.[93]

50. Other commenters support the minimum video programming service requirement for digital LPTV stations.[94] MSTV/NAB submits that "[E]nsuring that viewers receive service from digital Class A, LPTV and translator licensees that matches what they have come to expect from analog stations serves the public's interest in preserving free, over-the-air television service."[95] NTA notes that digital LPTV stations will be occupying spectrum designated for television broadcast to the public and that a video service requirement will minimize "the interest of spectrum speculators" seeking digital stations for the exclusive purpose of data transmission, which would restrict channel availability for broadcasting.[96]

51. We will adopt for digital low power TV stations the minimum video program service requirement applicable to digital Class A TV stations. Whenever operating, a digital LPTV station must use some portion of its digital capacity to provide a free video programming service intended for reception by the general public. This requirement could be met by retransmitting the video program services of TV broadcast or DTV broadcast stations or video programming obtained from other sources. Local video program originations would also satisfy the requirement.[97] The video programming service must be

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allowed to use or lease their spectrum for cellular phone or video-on-demand services); CBA Comments at 16-17 (suggesting that allowing LPTV stations flexibility to experiment with new digital services and technologies would assist our evaluation of "alternate systems.").

[89] Island Comments at 2. Zenith states that after performing tests on 8-VSB and COFDM signals, the Commission concluded there was insufficient evidence to warrant altering its DTV transmission standard and that the VSB modulation format was "sufficiently flexible" to accommodate further improvements. Zenith Reply Comments at 2.

[90] Commercial Broadcasting Reply Comments at 10; *see* also CBA Comments at 17.

[91] KM Comments at 8-9.

[92] 309 F.3d 796, 804 (D.C. Cir. 2002).

[93] *See generally* 47 U.S.C. § 301.

[94] Cavalier Comments at 16; Cox and Liberty Reply Comments at 5; MSTV/NAB Comments at 21.

[95] MSTV/NAB Reply Comments at 11.

[96] NTA Comments at 9 and Reply Comments at 23.

[97] *See* 47 C.F.R. § 74.701(g)-(h).

viewable on consumer receiver products designed for the Commission's DTV transmission standard[98] with a video resolution at least comparable to that of analog (NTSC) TV signals.

52. The video programming requirement will further our DTV goal "to promote and preserve free, universally available, local broadcast television in a digital world."[99] The Commission created the LPTV service to supplement the services of TV broadcast stations and provide opportunities for unmet service needs. In many communities, viewers uniquely depend on Class A TV and LPTV stations as their source of local news, weather and public affairs programming. We agree with Zenith that "Class A and LPTV stations are integral components of our national system of television stations."[100] We believe these stations should and will play a significant role in the nation's digital television broadcast system. We also agree with NTA that the minimum service requirement is appropriate, considering that digital LPTV stations will occupy TV broadcast channels and compete for spectrum with other stations that would provide free television programming.

53. *Permitted Digital Service*: In the *Notice* we tentatively concluded that digital LPTV stations should be permitted to use their bit stream dynamically to transmit one or more digital programs in any DTV video format and to offer all of the ancillary and supplementary services, including subscription services, allowed for DTV and digital Class A TV stations.[101] We also stated that LPTV station operators should be allowed to enter into arrangements with outside parties regarding ancillary and supplementary services, in the manner permitted for DTV broadcast licensees.[102]

54. We will adopt all of these flexible-use provisions for digital LPTV stations. We agree with CBA and other commenters that LPTV stations should have the same freedom as full-service stations to offer ancillary services.[103] We disagree with Rural Stakeholders that such flexible use is contrary to the secondary status of the low power TV service and would not further the DTV transition.[104] In the DTV proceeding, the Commission reasoned that permitting broadcasters to offer ancillary and supplementary services would provide opportunities "to develop additional revenues from innovative services" that will "help broadcast television to remain a strong presence in the video programming markets that will, in turn, help support a free programming service."[105] The record in this proceeding suggests this rationale applies with equal or greater force to digital LPTV stations. We are mindful of the economic concerns expressed in the comments of several Class A and LPTV licensees. We believe the flexibility we are providing herein will enable licensees of digital LPTV stations to offer many supplemental services to the public,

[98] *See* 47 C.F.R. § 73.682(d) - *Digital broadcast television transmission standard.* This standard incorporates by reference the ATSC Digital Television Standard, which incorporates the 8-VSB signal modulation format.

[99] *See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service* ("*DTV Fifth Report and Order*"), 12 FCC Rcd 12809 (1997) ¶ 5.

[100] Zenith Reply Comments at 5.

[101] *Notice*, 18 FCC Rcd at 18375.

[102] *See* 47 C.F.R. § 73.624(c) (examples of ancillary and supplementary services include computer software distribution, data transmissions, aural messages, paging services, audio signals and subscription video).

[103] CBA Reply Comments at 11; *see* also MSTV/NAB Reply Comments at 12; NTA Comments at 8.

[104] Rural Stakeholder Comments at 7. Rural Stakeholders, rural telephone companies that have acquired 700 MHz spectrum to provide broadband services, contend that digital LPTV stations would have a "cost advantage in providing competitive [subscription] services" because LPTV stations did not acquire spectrum though the competitive bidding process and that allowance for digital LPTV non-video subscription services would not foster the digital transition in rural areas.

[105] *DTV Fifth Report and Order* at ¶ 29.

including non-broadcast related services.

55. *Permissible Service Alternative:* The *Notice* sought comment on a permissible service alternative that would allow digital LPTV stations to provide only ancillary and supplementary services under special circumstances (*e.g.*, during hours such as 12:00 a.m. to 6:00 a.m.). We asked what circumstances, if any, would justify exclusion of the minimum free over-the-air video programming service requirement we are adopting for digital LPTV stations.[106] We also asked what interference criteria should be applied to services employing transmission methods other than those based on our DTV transmission standard.[107]

56. Few parties commented on this issue, and no commenter addresses interference criteria for alternate transmission systems. Entravision submits that we should impose a video program service requirement only during the hours from 6:00 a.m. to 11 p.m. in urban areas and 7 a.m. to 10 p.m. in rural areas.[108] Bruno maintains that this requirement should apply only when an LPTV station is "viable," which it defines as a station capable of being received by at least 85% of households in its market – in the sense DTV broadcast stations would be considered viable in this manner.[109]

57. We will not in this proceeding adopt a permissible service alternative for digital LPTV stations. First, we are providing LPTV station licensees ample flexibility to offer a variety of digital services of a nonbroadcast nature. Second, it is unlikely that licensees would invest in additional and separate technology to offer nonbroadcast services on an exclusive basis, if such service was confined to limited periods of time (e.g., 12:00 a.m. to 6:00 a.m.). Finally, we lack technical criteria for analyzing the interference potential of digital LPTV stations that would employ two-way communications systems and/or modulation types other than 8-VSB. We agree with NTA that, without adequate safeguards, digital LPTV stations should not be permitted to operate in a manner that could be likely to interfere with the reception of DTV service.[110]

58. *Additional Service Obligations*: The *Notice* proposed to apply to digital LPTV stations the additional service obligations applicable to analog LPTV stations and asked if there is any reason to treat analog and digital stations differently.[111] We received very little comment in this regard, and no commenter addressed specific requirements.[112] We reiterate that the purpose of this proceeding is to provide the regulatory foundation to permit stations in the LPTV service to transition to digital service, rather than to fundamentally alter the nature of the service. Accordingly, we adopt our proposal in the *Notice* to require digital LPTV stations to comply with the additional service obligations applicable to

[106] *Notice*, 18 FCC Rcd at 18377.

[107] *Notice*, 18 FCC Rcd at 18394-6.

[108] Entravision Comments at 4; *see* also NTA Comments at 9 (not opposing digital LPTV station transmitting ancillary and supplementary services exclusively in the "off-hours").

[109] Bruno Comments at 7.

[110] *See* NTA Reply Comments at 23-25 (raising interference concerns regarding two-way digital communications systems using UHF TV broadcast channels).

[111] *Notice*, 18 FCC Rcd at 18376, *citing* 47 C.F.R § 74.780 - "Broadcast regulations applicable to translators, low power and booster stations (*e.g.*, sponsorship identification and broadcasts by candidates for political office).

[112] MSTV/NAB Comments at 21.

analog LPTV stations.[113]

D. Channel Assignments

59. Spectrum availability presents a challenge for the transition of LPTV, TV translator, and Class A stations to digital operation. As we stated in the *Notice*, "the pace at which these stations begin to operate digitally may depend on the ability of station licensees to secure additional channels, which, in turn, will depend on the TV channels we make available for digital low power operations."[114] We therefore proposed to make available for digital low power stations VHF channels 2-13, inclusive, and UHF channels 14-59, inclusive (except 37, which is reserved for radio astronomy). We proposed the use of these channels for both on-channel analog-to-digital station conversions and for new digital LPTV and TV translator stations. We stated that these stations would be required to operate on a non-interfering basis to primary users of these channels and also protect earlier-authorized secondary users.

60. We sought specific comment on our proposal to allow digital low power operations on TV channels 52-59.[115] We noted that in the *Channel 52-59 Reallocation Order*, the Commission permitted LPTV and TV translator stations to operate indefinitely on these channels on a non-interfering basis and to negotiate interference agreements with new primary service providers.[116] We stated that use of channels 52-59 would facilitate the digital conversions of existing low power service. Alternatively, we sought comment on whether to permit use of channels 52-59 only when applicants could demonstrate that no lower channels are available for their digital operations. We also sought comment on whether this policy should apply to applications for new digital low power service or also include applications seeking to convert existing analog operations to digital.

61. With regard to channels 60-69, we sought comment on whether these channels should be made available for new digital LPTV and TV translator stations and/or digital conversions of existing analog stations.[117] In the *Channel 60-69 Reallocation Order*, the Commission decided that, in view of their secondary status, it would continue to authorize LPTV and TV translator service on these channels until the end of the DTV transition.[118] We noted, however, that, by statute, all TV broadcasters, including LPTV and TV translators, must vacate the use of this spectrum after the DTV transition ends.[119] The Commission concluded that the statute left it no discretion in clearing LPTV and TV translator stations from the band at the end of the transition period.[120] In the *Notice* we sought comment on whether we should authorize digital LPTV and TV translator stations on channels 60-69 and, if so, whether we should permit such authorizations only when applicants can demonstrate the lack of other available channels.[121]

[113] In a future proceeding, we will consider how to adapt existing public interest obligations for LPTV stations if they choose to multicast on their digital channels.

[114] *Notice*, 18 FCC Rcd at 18377.

[115] *Notice*, 18 FCC Rcd at 18378.

[116] *See Channel 52-59 Reallocation Order, supra.*

[117] *Notice*, 18 FCC Rcd at 18378.

[118] *See Reallocation of Television Channels 60-69, the 746-806 MHz Band*, 12 FCC Rcd 22953 (1997) (*Channel 60-69 Reallocation Order*).

[119] *See* 47 U.S.C. 336(e) ("any person who holds a television broadcast license to operate between 746 and 806 MHz may not operate at that frequency after the date on which the digital television service transition period terminates, as determined by the Commission").

[120] *Channel 60-69 Reallocation Order* at ¶ 29.

[121] *Notice*, 18 FCC Rcd at 18378.

In addition, we sought comment on whether to authorize digital low power service only on the channels that are not allocated for public safety operations.

62. Several parties support our channel assignment proposals.[122] APTS/PBS states that use of channels 52-69 is "essentially important to public television stations."[123] They estimate that more than one-third (35 percent) of public television translators operate on channels 52 and above and approximately 25 percent operate on channels 60-69. The CBA states that as many channels as possible should be made available for low power digital operation, including channels 52-59 and 60-69.[124] The CBA argues that, while it is true that "those channels will not be available indefinitely, their ultimate fate is well known, and those Class A/LPTV licensees who need to use those channels should be permitted to do so, on a temporary and secondary basis with knowledge of the risk."[125] APTS/PBS, Entravision and NTA maintain that there should be no requirement to demonstrate necessity in connection with an application to use an out-of-core channel.[126] NTA argues that "[A] prospective translator licensee would not choose an out-of-core channel without good reason."[127]

63. Numerous 700 MHz licensees, a few full-service broadcasters, public safety groups and some equipment suppliers, however, oppose authorization of new digital LPTV and TV translator stations in either the channel 52-59 or 60-69 bands.[128] The Rural 700 MHz Band Licensees take issue with our statement in the *Notice* that use of channels 52-69 by digital low power operations "could also provide additional opportunities for new digital stations, particularly in rural areas where new wireless and other primary services may not operate in the near future."[129] The Rural 700 MHz Band Licensees represent that many of the winning bidders from Auction Numbers 44 and 49 in rural areas "are in a position to proceed with their plans for Lower 700 MHz Band networks and to begin providing service to rural customers as soon as their business plan is completed and suitable equipment is identified and acquired."[130] Although they acknowledge that it will be perhaps years before equipment is available for the Lower 700 MHz Band Service at affordable prices, they argue that the band must be cleared of broadcasters as soon as possible "so that the larger auction winners can deploy services in major markets, thereby creating the economies of scale that will bring equipment prices down for rural providers."[131]

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[122] *E.g.*, CBA Comments at 9; NTA Comments at 9; APTS/PBS Comments at 9; Bonneville Comments at 7; Entravision Comments at 5-6; KAET Comments at 9; Venture Comments at 4-5; Vermont Educational Comments at 6; KM Comments at 9-10. The Joint Commenters request that we change our rules and permit applicants for digital low power TV authorizations on "channels 14-59 to displace" Private Land Mobile Radio operators. *See* Joint Commenters Comments at 9. We will not consider the Joint Commenters proposal because this issue was not addressed in the *Notice* and is therefore beyond the scope of this proceeding.

[123] APTS/PBS Comments at 10.

[124] CBA Comments at 9.

[125] *Id.* (footnotes omitted).

[126] APTS/PBS Comments at 10; NTA Comments at 10.

[127] NTA Comments at 10.

[128] *See* Paxson Comments at 6-9; Artic Comments at 2-6; Aloha Comments at 5-6; APCO Comments at 2; and the Comments of Access Spectrum, Corr, Datacom, Harbor, LIN/Banks, Martin, Motorola, Pioneer, Qualcomm, United, Rural 700 MHz, and Vulcan, *seriatim*.

[129] *Notice*, 18 FCC Rcd at 18378.

[130] Rural 700 MHz Band Licensees Comments at 6.

[131] *Id.*

64. Many of the 700 MHz licensees note that they have spent millions of dollars "for the rights to offer services where full-power broadcast facilities do not exist."[132] For example, when Access Spectrum bid for spectrum, it did so to acquire service areas that were "devoid of incumbent full-service broadcast facilities on the co-channel and adjacent channel frequencies to the maximum extent possible."[133] Access Spectrum states that it is likely that low power broadcasters will seek that same "white space" for their new digital operations. Aloha and Corr argue that they had no notice that digital low power service would be permitted in the 700 MHz band when they bid for spectrum and that allowing new low power broadcasters in the 700 MHz bands "breaks a faith with the companies who bid in good faith for the licenses for this spectrum."[134]

65. APCO is concerned about the potential impact of new digital LPTV and TV translator stations to public safety facilities operating in the channel 60-69 band.[135] APCO notes that TV channels 63, 64, 68 and 69 were reallocated for public safety use and that these channels will "play a critical role in alleviating dangerous congestion on existing radio systems, promoting greater inoperability among 'first responders' to emergencies of all sizes, and facilitating the deployment of new public safety communications tools."[136] APCO specifically opposes low power digital operations on these channels and first adjacent channels thereto.[137] APCO argues that allowing LPTV and translator stations to initiate operations on channels 60-69, even if on a secondary basis, would "set the stage for bitter community/political battles between LPTV and translator licensees, and public safety agencies seeking access to critical spectrum."[138] They support our proposal to license new digital low power television stations on channels 2-59.

66. Cavalier argues that, even if new digital low power stations are licensed on channels 52-69 on a secondary basis, new wireless licensees will "still have to deal with the new secondary stations" and that "takes time, money and effort which would be better spent providing new wireless services to the public."[139] This imposes an unfair additional cost on 700 MHz licensees, DataCom and Harbor Wireless argue.[140] Cavalier, Corr, and Qualcomm are concerned that interference disagreements may be difficult to resolve.[141] If the low power station does not have to shut down until the disagreement is resolved, Cavalier maintains that the low power station is not really secondary.[142]

67. Paxson argues that, if clearing these channels for new wireless and public safety services is a viable possibility, "it makes little sense to create an entire new class of temporary users of that spectrum – another set of stakeholders in whose interests it will be to stall band-clearing and the end of the DTV

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[132] Access Spectrum Comments at 3; *see also* Aloha Comments at 3; Motorola Comments at 3; Rural Stakeholders Comments at 4.

[133] Access Spectrum Comments at 3.

[134] Corr Comments at 4; Aloha Comments at 4.

[135] *See* APCO Comments at 1-4.

[136] *Id* at 2.

[137] *Id.*

[138] *Id.*

[139] Cavalier Comments at 7.

[140] DataComm Comments at 2; Harbor Comments at 3.

[141] Cavalier Comments at 7; Corr Comments at 3; Qualcomm Comments at 12.

[142] Cavalier Comments at 8.

transition."[143] The 700 MHz Advancement Coalition and the Rural 700 MHz Band Licensees state that our priorities must be the full-service DTV transition and clearing the 700 MHz band.[144]

68. We conclude that spectrum availability will largely determine the extent to which LPTV, TV translator and Class A stations can successfully transition to digital operation. Accordingly, we will adopt our proposal to make available for digital LPTV and TV translator operations VHF channels 2-13, inclusive, and UHF channels 14-59, inclusive (except channel 37). We agree that use of these channels is needed to facilitate the digital transition of the low power television service. We find it necessary to also make channels 60-69 available for digital low power operations, but on a more limited basis than the use of channels 52-59.

69. Before the creation of the LPTV service in 1982, TV translator stations were confined to the use of channels 55-69. Many hundreds of translator stations continue to operate on these channels. Our licensing experience indicates that over much the country in-core replacement channels for digital operations may not be available for many of these stations, at least until full-service broadcasters surrender channels upon completion of the DTV transition. We agree with the CBA and NTA that this spectrum is needed to ensure continued free television service to rural areas and to avoid leaving an undue number of low power stations with no realistic opportunity to develop digital service.[145] It would be unfair and unreasonable to deny temporary use of channels 52-69 for digital low power service at locations where no other channels are available for this purpose and where stations could operate without conflicting with new primary users of this spectrum. As discussed below, we disagree that permitting any use of this spectrum for digital low power TV operation will jeopardize public safety operations or impede the development of new wireless services.

70. We conclude that making channels 52-69 available for LPTV and TV translator station operations in the manner described below will balance the concerns of the low power television and 700 MHz wireless and public safety communities. As a preliminary matter, we will no longer permit the filing of applications for new analog stations in the LPTV service proposing these channels. Our goals in this proceeding are to facilitate the transition of LPTV, TV translator, and Class A stations to digital service and to do so in a way that minimizes disruption of new and existing services in the 700 MHz bands. Accordingly, we believe further use of channels 52-69 in the secondary low power service should be limited to incumbent LPTV, TV translator and Class A licensees and permittees for digital LPTV and TV translator operations and to analog LPTV and TV translator stations as replacement channels when confronted by channel displacement.

71. *Channels 52-59.* We adopt our proposal in the *Notice* to make channels 52-59 available for on-channel conversion from analog-to-digital operation. Pursuant to the application filing process adopted *infra*, we will also permit TV translator, LPTV, and Class A station incumbents[146] to seek use of channels 52-59 as digital "companion" channels (*i.e.*, to their existing analog TV service), but only where applicants can certify in their applications the unavailability of any suitable in-core channel for this purpose. We define a "suitable in-core channel" as one that would enable the station to produce a digital service area comparable to its analog service area. In addition, we will require that stations proposing use of channels 52-59 for digital operation notify all potentially affected 700 MHz commercial wireless licensees of the

[143] Paxson Comments at 9.

[144] 700 MHz Advancement Coalition Reply Comments at 5; Rural 700 MHz Band Licensees at 1.

[145] *See* CBA Reply Comments at 12; NTA Reply Comments at 15.

[146] In this regard, Class A incumbents will be filing as applicants for digital LPTV stations, rather than digital Class A stations, which are limited to the use of in-core channels.

spectrum comprising the proposed TV channel and the spectrum in the first adjacent channels thereto. Specifically, we will require notification to wireless licensees within whose licensed geographic boundaries a digital LPTV or TV translator station proposes to locate. We will also require notification to co-channel and first adjacent channel licensees whose geographic service area boundaries lie within 75 miles and 50 miles, respectively, of the proposed digital LPTV or TV translator station location. A station seeking an on-channel digital conversion must provide such written notification at least 30 days in advance of filing its minor change application. An applicant for a digital companion channel must provide the required notifications within 30 days of submitting its "long-form" application. In both cases, applicants must certify in their applications that the notification requirements have been met. These provisions will provide wireless licensees with advance notice of proposed digital low power facilities and an opportunity to coordinate with LPTV and TV translator licensees and permittees. The identity and contact information for all wireless entities in the 700 MHz band is readily available through our Universal Licensing System on the Commission web site (www.fcc.gov).[147] Digital LPTV and TV translator stations may continue to operate on channels 52-59 on a secondary basis as long as they do not technically conflict with the operations of a primary service licensee. LPTV and TV translator station authorizations will be explicitly conditioned to that effect.

72. Additionally, we adopt the following provisions in an effort to prevent secondary digital LPTV and TV translator stations from technically conflicting with future operations of primary 700 MHz wireless licensees, within their licensed service areas. Any existing or future primary wireless licensee in the 700 MHz band may provide notice of its intention to initiate or change operations in its licensed band that may impact secondary users. This notice should take the form of a letter, by certified mail, return receipt requested, to any digital LPTV or TV translator station operating on the spectrum comprising the TV channel and the spectrum in the first adjacent channel thereto. Such notice should indicate the approximate date of commencement of, or change to, the wireless service, and should be sent no less than 120 days in advance of that date. It should also describe the facilities and associated service area and operations of the wireless licensee with sufficient detail to permit an evaluation by the secondary LPTV or TV translator operator of the likelihood of interference from the operation of the LPTV or TV translator station to the primary 700 MHz wireless service.[148]

73. Upon receipt of such notice, the LPTV or TV translator licensee must cease operation of any interference-causing operation within 120 days, unless it obtains the agreement of the primary licensee to continue operations.[149] If the LPTV or TV translator licensee believes that its operation will not cause

[147] At present, auctions have been held and commercial licenses have been issued for the spectrum comprising TV channels 54 and 59 (spectrum Block C) and channel 55 (Block D). Geographic service areas for the Block C are the 306 Metropolitan Statistic Areas ("MSAs") and 428 Rural Service Areas ("RSAs"). These areas, generally consisting of one or more counties, can be ascertained from www.fcc.gov/auctions or FCC Report No. CL-92-40 entitled "Common Carrier Public Mobile Services Information, Cellular MSA/RSA Markets and Counties. 7 FCC Rcd 742 (1992). Geographic areas for the Block D consist of six Economic Area Groups ("EAGs"), consisting of Economic Areas, which, in turn, consist of an aggregate of counties. A map of these areas and a listing of counties and EAGs is available at the above web site. Contact information on wireless licensees can also be obtained from this site for a particular auction (Auctions 44 and 49) or using the "Market-Based" license search tools under www.fcc.gov/wtb.

[148] The notice should provide such information as the frequencies, bandwidth, modulation, and radiated power of fixed and mobile/portable emitters, the geographic coordinates and antenna heights of fixed stations, and the mobile/portable operating area.

[149] A digital LPTV or TV translator licensee may file a "displacement relief" application for an available replacement channel and related facilities and a request for special temporary authority to begin operating on that channel.

interference to the primary licensee, or if it wishes to negotiate an alternative arrangement, it may enter into discussions with the 700 MHz wireless licensee, in which both parties shall cooperate in an effort to resolve the potential conflict and permit continued operation of the secondary LPTV or TV translator station. The broadcast licensee must inform the 700 MHz wireless licensee of any means by which it seeks to resolve the potential for interference to the primary licensee. The secondary digital LPTV or TV translator licensee may not continue operations if such operations would interfere with the primary 700 MHz licensee's operations after the commencement or change to the wireless service.

74. We seek a balance for the resolution of the potential for interference conflicts that will neither unduly delay the rendering of 700 MHz wireless service, nor result in the premature disruption or cessation of digital LPTV or TV translator service. Based on our licensing experience, we expect that primary wireless and secondary broadcast licensees will use the notification process described above to resolve most potential interference conflicts before the commencement of 700 MHz wireless operations and without the need for Commission intervention. We believe that, in most cases interference conflicts can be resolved within this period. [150] The secondary LPTV or translator licensee may ask the Commission to stay the effect of the interference notification and allow it to continue secondary operations until the matter is resolved. The Commission will address such requests on a case-by-case basis, but in the absence of a stay, we will require the digital LPTV or TV translator station to cease operating on its 700 MHz channel in the event the conflict has not been satisfactorily resolved within 120 days of receipt of the notice.[151]

75. Notwithstanding the notification process described above, we note that a primary wireless licensee maintains the right to require that a secondary broadcast licensee immediately cease operations that cause actual interference to its operations, regardless of whether it has gone through the notification process. The notification process is intended to deal with potential interference by affording a primary licensee a process for initiating the clearance process before it actually commences service, while giving the secondary licensee time to move or seek a negotiated alternative.

76. *Channels 60-69.* We will limit LPTV and TV translator application proposals for channels 60-69 to on-channel digital conversions of authorized analog stations and to those related to analog or digital channel displacement. In the *Notice* we noted that all broadcasters, including LPTV and TV translator stations, are statutorily required to vacate the use of this spectrum after the full-service DTV transition ends. Digital low power operation on channels 60-69 must therefore cease at the end of the full-service DTV transition. Considering the potentially limited time stations could operate on these channels, we will not permit incumbent station permittees and licensees to seek their use as digital LPTV or TV translator companion channels. Further, four of the ten channels in this band are allocated for use by public safety services. We will require applicants for digital conversion on channels 60-69 to notify potentially affected commercial wireless licensees (including 700 MHz Guard Band managers) on the same basis as the notifications to licensees on channels 52-59.[152] To ensure that secondary operations do not conflict with primary wireless operations, we adopt the same procedures as in channels 52-59 for current and future

[150] The 120-day period should help to overcome the constraints imposed by seasonal conditions on access to remotely located LPTV or TV translator sites (*e.g.*, site inaccessibility due to snow).

[151] In the event that the commencement of wireless service is delayed beyond the 120-day period, the period will automatically be extended until the actual commencement of wireless service.

[152] At present, auctions have been held and band manager licenses have been issued for the two paired blocks of "guard band" spectrum: 746 -747 MHz paired with 776-777 MHz (Block A, including portions TV channels 60 and 65) and 762-764 MHz paired with 792-794 MHz (Block B, including portions of TV channels 62 and 67). The licensed geographic market areas for these blocks are the 52 Major Economic Areas ("MEAs"). Detailed information is available at the web sites given in the preceding footnote (*see* Auction 33). *See also* www.fcc.gov/oet/info/maps/areas for a map and county list for the MEAs.

upper 700 MHz commercial licensees to provide notice of potential technical conflicts to digital LPTV or TV translator stations, and require the secondary broadcast licensee to cease operations within 120 days of such notice, unless the parties can resolve the conflict (e.g., by entering into an agreement permitting the continued operation of the secondary licensee) or until the Commission has stayed the conflict resolution process, if requested to do so.

77. Because of the critical nature of public safety operations, we will provide an additional "prior coordination" requirement for secondary digital low power broadcast use of channels 63, 64, 68 and 69 – the TV channels comprising the upper 700 MHz spectrum allotted for public safety operations.[153] Before filing their minor change applications at the Commission, applicants seeking use of one of these channels for on-channel digital conversion must successfully coordinate their proposed facilities with representatives of the potentially affected public safety entities. The purposes of this coordination are to prevent interference to current public safety operations and to establish a mechanism for eventual cessation of broadcast operations to avoid interference to future public safety operations. Because spectrum segments in each of these TV channels are administered separately by regional planning committees[154] and states,[155] we will require separate coordination with both entities. Coordination agreements may detail the conditions of the low power digital operations on the public safety channels, including provisions for cessation of broadcast operation to avoid interference, but may not provide for acceptance of interference by an entity operating on public safety channels. Coordination must be undertaken with the regional planning committee[156] and state 700 MHz spectrum administrator for the region and state within which a digital low power station proposes to locate and for other regions and states having boundaries located within 75 miles of the proposed digital low power station location.[157] Within 30 days of filing their applications, we will also require applicants proposing digital conversion on a channel adjacent to channels 63, 64, 68 or 69 to notify their proposed facilities to the pertinent regional planning committees and state administrators (*i.e.*, for the geographic region and state encompassing the proposed broadcast antenna site and other regions and states having boundaries located within 50 miles of the proposed site). Applicants must certify in their applications that these requirements have been met. Thus, for channels 63, 64, 68 and

[153] The spectrum in each of these TV channels is subdivided into narrow band (6.25 kHz) and wideband (50 kHz) channels. The 6 MHz spectrum in a TV channel contains interspersed groups of public safety channels assigned for the following purposes: general use, interoperability, state channels, low power operations, secondary trunking and reserve spectrum. The 12.5 MHz designated as "general use" spectrum is administered by 55 Regional Planning Committees (RPCs), comprised of representatives of various public safety entities. Although most of these regions consist of single states, some are comprised of multiple states or portions of states. For example, the state of California contains two regions. The spectrum assigned for "state channels" and "interoperability" is administered by designated state government entities known as State Interoperability Executive Committees (SIECs).

[154] There may be regions in which there is no 700 MHz RPC, either because no RPC was formed or because the RPC disbanded upon completion of its planning tasks regarding the 700 MHz public safety spectrum. In areas without a 700 MHz RPC, LPTV and TV translator applicants should undertake the required prior coordination directly with the potentially affected licensees, or with a frequency advisory committee certified by the Commission to coordinate 700 MHz public safety channels.

[155] Some states have chosen not to form SIECs. In those states, the function of SIECs is performed by the 700 MHz RPC, so the required coordination should be undertaken with the relevant 700 MHz RPC.

[156] We here clarify the RPC are not required or expected to amend their regional plans to reflect secondary LPTV or TV translator operations on Channels 63, 64, 68 and 69.

[157] The location of public safety planning regions and contact information for the regional planning committees and states is available at the Commissions Internet site. *See* http://wireless.fcc.gov/publicsafety/700MHz/regional.html, http://wireless.fcc.gov/publicsafety/700MHz/state.html and http://wireless.fcc.gov/publicsafety/700MHz/interop-contacts.html

69, obtaining affirmative coordination from the proper entity or entities is a prerequisite; it will not be sufficient to show that no party objected to the proposal. If prior coordination has not been successfully completed, the minor change application will be dismissed.[158] Digital low power broadcast operations must not cause interference to public safety operations, and these operations must cease if such interference occurs, or in any event at the end of the full-service DTV transition.[159] All authorizations will be so explicitly conditioned.

78. We believe the above limitations on digital low power broadcast use of channels 52-69 should alleviate concerns about interference and other impediments to wireless and public safety operations. We will continue to strictly enforce the secondary regulatory provisions of the LPTV service. In this regard, the Joint Commenters recall that the Commission has "consistently and aggressively reacted to any complaint that an LPTV station might be interfering with a primary service licensee."[160] The Joint Commenters add that: "[T]here is no hesitation on that staff's part to instruct the allegedly offending LPTV licensee to immediately cease transmissions. This manner of handling primary/secondary conflicts is so consistent that when a primary service co-channel licensee signs on the air most LPTV licensees automatically sign off the air without even being asked to or being confronted with an allegation of interference."[161] We do not believe LPTV and TV translator operators will be lulled, as some 700 MHz commenters suggest, into a false sense of security, given the history of LPTV channel displacement by full-service television stations.[162] We have no reason not to believe that LPTV and TV translator station licensees will continue to honor their non-interference obligations and maintain the excellent interference track record of the LPTV service.

79. We also do not find the potential for channel displacement to be an impediment to limited use of channels 52-69. We agree with the CBA that "the scenario of secondary use and the disruption that comes from displacement is a necessary part of efficient and timely use of the spectrum and is absolutely necessary here to avoid leaving an undue number of Class A/LPTV stations with no realistic opportunity to develop service."[163] Our licensing experience indicates that channel displacement is not a necessarily complicated or time-consuming process that would be expected to unduly delay the implementation of new wireless uses in the 700 MHz band.[164] As NTA points out, modern LPTV and TV translator transmitters are frequency agile . . . "[T]hus a channel change need not require a major replacement of equipment and can be a relatively minor cost."[165]

80. We acknowledge the concerns of public safety and broadband wireless interests about the

[158] We have no reason to believe the RPCs and SIECs will unreasonably refuse to coordinate with LPTV and TV translator applicants. In that connection, we understand that developing, budgeting for, and implementing public safety communications systems is often a multi-year process. We therefore do not expect RPCs and SIECs always to be in a position to identify with precision the facilities for which protection is necessary.

[159] As noted *infra*, LPTV or TV translators that receive a report of interference to 700 MHz licensees, must cease operation immediately upon notification by any primary wireless licensees and once it has been established that the LPTV or translator station is causing the interference.

[160] Joint Commenters Reply Comments at n.1.

[161] *Id.*

[162] *See* Motorola Reply Comments at 5; Joint Commenters Reply Comments at ¶ 31.

[163] CBA Reply Comments at 8.

[164] *See* Motorola Reply Comments at 5.

[165] NTA Reply Comments at 15.

potential issues associated with permitting digital LPTV and TV translators to use the 700 MHz bands; however, we do not agree that allowing low power broadcasters to use the 700 MHz band on a secondary, non-interference basis for digital facilities would amount to an unconstitutional taking of rights from those wireless licensees that obtained their spectrum at auction.[166] In the channel 60-69 reallocation proceeding, we determined to continue licensing analog low power facilities on a short-term, secondary basis. In the 52-59 reallocation proceeding we retained the discretion to cease accepting applications for additional LPTV and TV translator stations, but did not preclude altogether the filing of such applications. As APTS/PBS points out, the Commission had stated when it reallocated the Lower 700 MHz band (Channels 52-59) in 2001 that it intended to allow for some LPTV use of that band on a secondary basis.[168]

81. Finally, we find that limited use of digital low power broadcasting on channels 52-69 will not have a negative effect on the full-service DTV transition, but rather will help to promote the overall transition for rural and underserved areas.

E. Interference Protection

1. Protected Digital Translator and LPTV Service Contour

82. In the *Notice* we proposed the following protected signal contour values for digital LPTV and TV translator stations, as calculated from the F(50,90) propagation method in Section 73.625(b)(1) of our rules: 43 dBu for stations on channels 2 – 6, 48 dBu for stations on channels 7 – 13, and 51 dBu for stations on channels 14 – 69.[169] These are the values we had previously adopted for the digital Class A TV service.[170] We chose digital Class A TV station protected contour values that reflected the differences between analog LPTV and full-service TV station protected contours, reasoning that these values would yield digital Class A service areas comparable in size to analog Class A TV stations' service areas, which would also permit the operation of co-channel stations at closer distances, increasing opportunities for new digital Class A, LPTV, and TV translator stations. We indicated that the rationale for selecting the digital Class A protected contour values also should apply to digital LPTV and TV translator stations because Class A TV stations started as LPTV stations and operate under the

[166] Corr argues that allowing low power broadcasters to use the 700 MHz band for digital operations is a deprivation of the 700 MHz licensees' exclusive rights in that property and would be subject to the taking provisions of the Fifth Amendment to the United States Constitution and would require either a rebate of some or all of the auction price or a payment for the lost value. Corr Comments at 6. The Commission has on numerous occasions stated that while its "exclusive use" licensing model resembles property rights in spectrum, this model does not imply or require creation of "full" private property rights in spectrum. *See, e.g.*, Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands, 18 FCC Rcd 23318, 23346, n. 184 (2003). Courts have held that licensees have no property rights in a radio license. *See, e.g.*, Ashbacker Radio Corp. v. FCC, 326 U.S. 327, 331 (1945) (stating that "[n]o licensee obtains any vested interest in any frequency"). Furthermore we do not view the licensing of a limited number of new digital low power television stations in the 700 MHz band as a deprivation of the rights of the 700 MHz licensees. The 700 MHz licensees will not be deprived of their right to use their spectrum because digital low power television licensing in the 700 MHz band will be done on a secondary basis. Under the rules we adopt herein, new digital low power television stations will not be permitted to interfere with 700 MHz wireless operations. Therefore, 700 MHz licensees will retain the flexibility to deploy their facilities and use their auctioned spectrum as they see fit.

[168] APTS/PBS Reply Comments at 13.

[169] 47 C.F.R. § 73.625(b)(1). This rule specifies the procedure for determining F(50,90) field strength values from the Commission's F(50,50) and F(50,10) propagation curves.

[170] *See Class A Report and Order* ¶ 38; *see* also 47 C.F.R. § 73.6010.

same effective radiated power limits and many of the same interference protection criteria as LPTV stations. We also sought comment on our belief that these values continue to be appropriate for digital Class A TV stations.

83. Among others, NTA, AFCCE, and Parsons agree that the protected contours for each frequency band as proposed in the *Notice* are appropriate.[171] No commenter opposed these values, suggests any other values, or suggests changing the current values for digital Class A TV stations. For the reasons described in the *Notice*, we are adopting our proposed values for digital LPTV and TV translator station protected signal contours, and we are re-affirming the same values for digital Class A TV stations.

2. Protection Standards and Methodology -- Broadcast Station Protection

84. In the *Notice* we discussed the need to balance providing spectrum opportunities for low power digital service and ensuring adequate protection to authorized broadcast services. We wish to explore every means of maximizing channel use for digital LPTV and translator service, recognizing that TV channel availability is limited in much of the country. In addition, however, the service of full-service and low power broadcast stations must be protected, and we seek to minimize instances of interference caused by LPTV and TV translator stations.

85. Applications for analog LPTV and TV translator stations must satisfy interference prediction criteria that depend on the nature of the station being protected and the channel relationship between the proposed and protected stations.[172] Most commonly, predicted field strengths of a proposed station must not exceed values that would cause certain desired-to-undesired ("D/U") signal strength ratios to be exceeded at locations along another station's protected contour ("contour overlap methodology"). Application acceptance standards for potential interference from analog and digital Class A TV facilities to DTV service require the service population within a DTV station's noise-limited contour to be protected using the same approach as applicants for proposed full-service TV and DTV facilities use to analyze potential interference to DTV service ("DTV methodology" or "OET 69 method"). Unlike DTV broadcast stations, Class A TV and digital Class A TV stations are not permitted to cause *de minimis* levels of DTV service population reduction other than a 0.5% rounding allowance.[173]

a. Desired-to-Undesired ("D/U") Signal Strength Ratios

86. In the *Notice* we proposed to base standards for accepting digital LPTV and TV translator station application proposals on D/U protection ratios for analysis of predicted interference to and from digital LPTV and TV translator stations. We reasoned that D/U ratios provide an accurate basis for interference analyses, and that D/U-based approaches facilitate efficient spectrum use by taking into account such factors as the characteristics of directional transmitting and receiving antennas and the

[171] NTA Comments at 10; AFCCE Comments at 2; Parsons Comments at 11.

[172] 47 C.F.R. §§ 74.705, 74.706, 74.707, and 74.708 define requirements for the protection of TV broadcast stations, DTV stations, low power TV and TV translator stations, Class A TV and digital Class A TV stations, respectively.

[173] In the DTV proceeding, we permitted DTV stations in the initial allotment table to decrease the populations served by NTSC TV and other DTV stations by no more than two percent, not to exceed a total population reduction from all stations of ten percent. Applicants seeking facilities modifications of full-service NTSC stations may not cause any additional interference to DTV service, other than a 0.5% reduction in service population to account for rounding and calculation tolerances. *See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, 13 FCC Rcd 7418 (1998).

effects of terrain on the propagation of the signals from both the desired and undesired stations. We specifically proposed to apply the co-channel D/U ratios for "DTV-into-analog TV," "Analog TV-into-DTV" and "DTV-into-DTV" given in Section 73.623(c)(2); the DTV-to-DTV co-channel adjustment formula and analog-to-DTV co-channel adjustment table given in Section 73.623(c)(3); and the "DTV-into-analog TV" D/U ratios given for the following channel relationships: N-2, N+2, N-3, N+3, N-4, N+4, N-7, N+7, N-8, N+8, N+14 and N+15 (collectively, the "UHF taboo" channel relationships).[174]

87. Commenters generally support our proposals. For example, AFCCE and Greg Best support providing protection based on D/U ratios to full-service and LPTV/TV translators.[175] These commenters also agree with the using the D/U ratios as proposed for co-channel situations.[176] Sgrignoli generally supports the D/U ratios for taboo channel relationships, but points out a discrepancy between the rules and OET Bulletin 69 for the N+7 taboo.[177] In addition, dLR supports use of the D/U ratios of 73.623(c) for determining interference protection from digital LPTV and TV translator stations.[178] In urging that our interference prediction methodology not rely solely on D/U ratios, MSTV/NAB submits that the D/U ratios used to develop the DTV Allotment Table "were based on limited and incomplete data, and a single prototype DTV receiver was used to develop these ratios."[179] MSTV/NAB notes that the broadcast and consumer electronics industries are working through the Advanced Television Systems Committee ("ATSC") to recommend DTV receiver performance standards to the Commission that would assist in refining the initial D/U ratios.[180]

88. For the reasons described in the *Notice*, we are adopting our proposed D/U ratio values for digital LPTV and TV translator stations protecting co-channel and UHF-taboo-channel-related stations. These values from Section 73.623 of our rules are the ones we use for full-service DTV interference analysis with respect to these channel relationships. The current version of OET Bulletin 69 has corrected the N+7 D/U ratio, and it now matches our rule.[181] With regard to the concern of MSTV/NAB, the D/U ratios in our rules have been consistently used to analyze TV and DTV broadcast station proposals. These ratios have also been applied to study requests to waive the LPTV and TV interference protection criteria using OET-69 interference prediction methods. We are not persuaded that it would be inappropriate to apply D/U ratios in our DTV rules to the analysis of digital station proposals in the LPTV service. If we revise these ratios for purposes of interference protection among TV and DTV broadcast stations, we will consider amending our LPTV interference rules accordingly.

[174] *Notice*, 18 FCC Rcd at 18382-3.

[175] AFCCE Comments at 3; Greg Best Comments at 3.

[176] Sgrignoli Reply Comments at 5; Greg Best Comments at 3.

[177] Sgrignoli Comments at 6.

[178] dLR Comments at 3.

[179] MSTV/NAB Comments at 15.

[180] *Id.* On June 22, 2004, the Advanced Television Systems Committee (ATSC) approved "ATSC Recommended Practice: Receiver Performance Guidelines" (ATSC Doc. A/74). This document, which establishes voluntary guidelines for DTV receiver performance, is available at www.atsc.org.

[181] OET Bulletin No. 69, "Longley-Rice Methodology for Evaluating TV Coverage and Interference (February 06, 2004), available at FCC Internet address: http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet69/oet69.pdf.

b. First Adjacent Channel Ratios

89. In the *Notice* we proposed that analog LPTV and TV translator station proposals protect first adjacent channel digital LPTV and TV translator stations based on the D/U values given in Section 73.623(c)(2) of the rules (-48 dB for "Lower analog TV-into-DTV" and -49 dB for "Upper analog TV-into-DTV").[182] For digital LPTV and TV translator protection to first adjacent channel analog and digital stations, we sought comments on alternatives to the D/U ratios in our DTV rules (-14 dB for Lower DTV-into-analog TV, -17 dB for Upper DTV-into-analog TV, -28 dB for Lower DTV-into-DTV, and -26 dB for Upper DTV-into-DTV). Alternatives were described, based on the "Sgrignoli Paper," on the effects of DTV transmitted "sideband splatter" into adjacent channel NTSC analog and DTV signals.[183] That paper derived first adjacent channel D/U ratios based on digital TV translator use of two proposed out-of-band spectral emission masks referred to as the "Simple" and "Stringent" masks (Simple: 10 dB for DTV- into- Analog and -7 dB for DTV- into- DTV; Stringent: 0 dB for DTV- into- Analog and -12 dB for DTV- into- DTV). We noted that the more restrictive D/U ratios are associated with the less restrictive emission mask. We also asked whether selected first adjacent channel ratios and related emission masks should be applied to digital Class A TV stations and whether there are processing implications that would complicate record-keeping and interference analysis if applicants are required to specify one of multiple mask options in their applications. We tentatively concluded that under such circumstances, stations seeking to change their mask would be required to file a minor change application to modify their authorizations.

90. Commenters generally support our proposals. Sgrignoli suggests that the analog-into-DTV adjacent channel ratios are not being regularly met by DTV receivers and were developed without accounting for "splatter." He argues that using -43 dB for both upper and lower adjacent channels would be more conservative and would more reliably protect against interference.[184] Greg Best argues that the adjacent channel analysis provided by the Sgrignoli paper should only apply to co-located adjacent channel situations.[185] Venture proposes use of the DTV-into-DTV adjacent channel D/U ratios in our DTV rules where stations would use sufficient out-of-channel emission filtering.[186]

91. As proposed, we will use the first adjacent channel D/U ratio values in Section 73.623 of our DTV rules for analog LPTV and TV translator station protection of digital LPTV and TV translator stations. These values are consistently used for determining interference between all combinations of full-service TV and Class A TV stations. For digital stations protecting analog and digital first adjacent channel stations, our decision to allow a station to elect its emission mask compels us to specify different D/U ratios based on the elected mask. The values derived in the Sgrignoli paper are the only documented option. We recognize that these values may be more conservative than necessary in certain circumstances and reserve the right to re-visit this issue based on our experience authorizing service and the actual operation of stations authorized under these criteria. These ratios (and the associated emission masks), however, would appear to be well suited to accommodate co-sited operations involving use of

[182] *Notice*, 18 FCC Rcd at 18383.

[183] "DTV Repeater Emission Mask Analysis," Gary Sgrignoli, *IEEE Transactions on Broadcasting*, March 2003, Volume 49, Number 1, Pages 32-80, ISSN 0018-9316, which is also available at the following Internet site: www.zenith.com/digitalbroadcast/downloads/DTV Emission Mask Analysis.pdf.

[184] Sgrignoli Reply Comments at 7 (indicating that his analysis corrects a short-coming of the original D/U ratio development ignoring "splatter").

[185] Greg Best Comments at 3.

[186] Venture Comments at 5.

first adjacent channels, a situation we believe will occur extensively at TV translator installations. Accordingly, we will require applicants to specify the emission mask they will comply with, and we will require the use of the following D/U ratios based on the specified mask:

	DTV into Analog	DTV into DTV
Simple Mask	10 dB	-7 dB
Stringent Mask	0 dB	-12 dB

92. As discussed *infra*, we will make some accommodation to station operators converting existing analog transmitters for "on-channel" digital operation where the analog transmitter falls short of the Simple Mask (i.e., at the mask "shoulders"), due to limitations of the transmitter's RF power amplifier. In this event, we will apply the adjacent channel D/U ratios for the Simple Mask.

c. Interference Prediction Methodology

93. In the *Notice* we sought comment on the appropriate methodology for interference analysis to be used in the application process for accepting digital LPTV and TV translator applications.[187] One possible choice would be the contour protection approach now used to evaluate analog LPTV and TV translator station proposals. We proposed to clarify that for digital proposals we would use the Commission's F(50,90) propagation method in lieu of the F(50,50) curves to determine distances to the protected contours of digital stations, and that F(50,10) curves would be used to locate all digital interference contours.[188] While our use of contour overlap methodology has resulted in very little reported interference to over-the-air broadcast reception, we noted that it has shortcomings that could result in fewer opportunities for digital LPTV and TV translator service. The shortcomings include incomplete consideration of terrain effects on signal propagation, not considering locations inside the protected contour where interference might occur despite protection being afforded along the contour, not considering the effects of interference predicted from other stations (interference "masking"), not accounting for the directional signal attenuation characteristics of outdoor receiving antennas, and not making any allowance for signal attenuation characteristics of transmitting antennas in the vertical plane.

94. As a preferred alternative to the contour overlap approach, we sought comment on basing application acceptance on our DTV interference prediction methodology.[189] We noted that use of the DTV methodology is permitted to support analog LPTV waiver requests and in the Class A TV service to protect authorized and allotted DTV facilities.[190] We noted that the DTV methodology overcomes the shortcomings we identified with the contour overlap methodology.

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[187] *Notice*, 18 FCC Rcd at 18384.

[188] *See* 47 C.F.R. § 73.625(b).

[189] The DTV interference model is based on service area and interference provisions given in Sections 73.622 and 73.623 of our rules and additional engineering criteria given in OET Bulletin 69. OET Bulletin, "Longley-Rice Methodology for Evaluating TV Coverage and Interference (July 2, 1997), available at FCC Internet address http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet69/oet69.pdf.

[190] *See, e.g.*, 47 C.F.R. §§ 74.705(e), 73.6013 and 73.6018. Class A station proposals are not permitted to decrease the predicted service populations of DTV stations and allotted facilities by more than 0.5%, an allowance for rounding and computer platform tolerance.

95. We suggested that this proceeding is an appropriate time to follow through on a 1997 Commission statement in the DTV proceeding that, in the future, we would consider changing the LPTV and TV translator application acceptance criteria to reflect the DTV service approach.[191] Our DTV prediction methods and computer model have been used for several years in the regular processing of applications for DTV and NTSC TV facilities, as well as in the evaluation of requests by LPTV and TV translator applicants to waive the contour protection standards. Most long-form applications filed in the most recent LPTV filing window (August 2000) requested waivers based on OET-69 type interference analysis. Thus, engineering consultants appear to be prepared to use the DTV interference prediction methods for digital TV translator and LPTV operations.

96. In connection with the possible adoption of DTV methodology, we sought comment on necessary revisions for digital LPTV and TV translator interference analyses, especially whether using the standard vertical antenna pattern assumed in OET Bulletin 69 is appropriate for analysis of digital and analog LPTV and TV translator stations.[192] Our concern included some areas close to the LPTV or TV translator stations' towers that would not be predicted to be served by those stations, possibly including the main community. We observed that if service is not predicted, protection from interference is not afforded. We also expressed concern about possible under-prediction of the interference impact to other LPTV and translator stations as well as to full-service analog and DTV stations on adjacent channels. We also sought comment on the extent of antenna beam tilting by LPTV and translator stations and its importance as an input to the interference prediction model. Finally, we sought comment on whether we should consider using the DTV methodology for analog LPTV, TV translator, and Class A TV application acceptance studies. We also asked how to deal with the possibility of making changes to protection standards currently based on minimum distance separations.[193]

97. CBA and NTA each suggests that the present system be retained, where a prohibition of overlap between interfering and protected contours is established as the initial test, and the terrain-based OET Bulletin 69/Longley-Rice method is available when the contour method produces an unnecessarily restrictive result.[194] They contend that the Longley-Rice method may be more precise, but the contour method is easier and less expensive for those who do not need a more sophisticated approach. Whether or not the contour overlap approach is abandoned, CBA urges that Longley-Rice should be recognized as an acceptable approach for any applicant who wants to use it, without having to request a rule waiver.

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[191] *See Advanced Television Systems and Their Impact upon the Existing Television* Broadcast *Services,* 12 FCC Rcd (1997), ¶ 145.

[192] We noted that use of the assumed transmitting antenna vertical plane radiation patterns set forth in Table 8 of OET Bulletin 69 could under-predict LPTV and translator service and interference potential. OET Bulletin 69 specifies analog and digital radiation patterns for the frequency band of the channel being considered based on antennas typically used by full-service TV stations, employing a moderate amount of electrical beam tilt (0.75 degrees) and a relatively high gain in the main lobe, while typical LPTV and TV translator stations use transmitting antennas with less gain and more beam tilt because such antennas are less expensive, smaller and lighter, and transmit a larger proportion of the stations' limited power downward toward the close-in locations these stations want to serve. In addition, we noted that TV translator stations are often sited on hills or mountain slopes where they use electrical antenna beam tilt or combinations of mechanical and electrical tilt to maximize their signal down into the served communities.

[193] *See* 47 C.F.R. § 74.705.

[194] CBA Comments at 4.

NTA agrees.[195] AFCCE believes the OET-69 interference prediction methodology using the Longley Rice propagation model should be used instead of the previously used contour method.[196] Greg Best agrees because widely varying terrain is not effectively considered using the contour method.[197] Some parties support use of different methodologies in different circumstances; for example, contours in rural areas and DTV methodology in urban areas.[198] Fox urges that the contour method should be replaced with the TIREM model and not OET-69.[199]

98. Some parties urge changes to the methodology to make the protection requirements more restrictive. For example, MSTV/NAB requests that interference standards for protecting full-service stations be revised by updating the D/U ratios, not allowing digital LPTV or TV translator stations within the noise-limited contour of any full-service analog or digital station on the same channel or a first adjacent channel and not allowing (in the UHF band) digital LPTV and TV translator stations within 31 km of the noise-limited contour of a full-service station if operating on the +/- 2nd, 3rd, 4th, 7th or 8th adjacent channels or within 48 km if operating on +/- 14th or 15th channels.[200] Brey urges that full-service DTV stations should be protected from interference by digital Class A, LPTV, translator, and booster stations to the limits of the DTV stations' actual coverage.[201] Renard suggests that contour interference should not include consideration of directional receiving antenna characteristics and that OET-69 should not be modified to account for intermodulation interference.[202]

99. On the other hand, Joint Commenters suggest eliminating the UHF taboos for +/- 2nd, 3rd, 4th, 5th and 7th channel for the protection of analog stations by digital stations.[203] Similarly, several commenters suggest applying the full-service DTV 2% / 10% *de minimis* interference standard to the interference caused by digital LPTV and TV translator stations, or at least among digital stations in the LPTV service.[204] CBA also suggests that areas already receiving interference should be disregarded in determining whether new interference will be caused (known as "masking"), and the directional characteristics of over-the-air receiving antennas should be recognized.[205] NTA suggests that stations that already accept 10% or more interference before the new application is considered should have the predicted new interference amount rounded to the nearest whole percent, allowing less than 0.5% and

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[195] NTA Comments at 11; *see also* St. Clair Reply Comments at 5 (suggesting a combination of contour overlap and DTV methodology); Parsons Comments at 12 (advocating use of contour protection method with allowance for Longley-Rice and OET 69-type methods on a waiver basis).

[196] AFCCE Comments at 3.

[197] Greg Best Comments at 5; *see also* APTS/PBS Comments at 14; dLR Comments at 4.

[198] Joint Commenters Comments at 11; Mullaney Comments at 2; Venture Comments at 5; *see also* Metrocast Comments at 4 (expressing concern about unrestricted use of Longley-Rice); MSTV/NAB Reply Comments at 16 (supporting a combination of contour protection and minimum distance separations).

[199] Fox Comments at 9.

[200] MSTV/NAB Comments at 16; *see also* Paxson Reply Comments at 4 (urging re-examinination of existing interference standards).

[201] Brey Comments at 3.

[202] Renard Reply Comments at 7-8.

[203] Joint Commenters Comments at 10.

[204] CBA Comments at 4; NTA Comments at 12; Greg Best Comments at 5.

[205] CBA Comments at 11.

specifying the full percent rounding in the rule.[206] AFCCE believes that a 2% *de minimis* interference standard should be applied from digital LPTV and TV translator stations to Class A TV, LPTV, and TV translator stations, analog or digital; full-service DTV stations also should be permitted a 2% *de minimis* interference standard with respect to protection of Class A TV stations.[207] AFCCE and dLR believe the use of a 1 square kilometer grid resolution should be the maximum permitted in evaluating the interference to Class A, LPTV, and TV translator facilities, whose smaller service areas require a finer grid resolution analysis.

100. With regard to vertical antenna patterns, CBA supports realistic interference calculations but does believe that it is important not to take the level of detail beyond what is readily available in reasonably priced computer software that will run on commonly used computers.[208] NTA expresses concern that the FCC's implementation of the OET Bulletin 69 procedures allows for only one assumed vertical pattern for each frequency band and type of transmission, chosen to be representative of the vertical patterns of the antennas used by full-service stations, and that it is not possible to specify the actual beam tilt of either a proposed or target station.[209] NTA and other commenters urge accommodation of actual vertical antenna patterns and request that the electrical and mechanical beam tilt, if any, should be specified in the application and utilized in the analysis.[210] If this is not possible, NTA suggests that we establish three standard vertical patterns for each band – broad, medium, and narrow -- and require LPTV and translator applicants to specify which vertical pattern is closest to the antenna they will use.[211] Alternatively, NTA suggests that the several vertical patterns be developed by industry consensus outside the rulemaking proceeding and incorporated into OET Bulletin 69. AFCCE suggests establishing a default vertical plane radiation pattern for situations where a custom vertical pattern is not specified.[212] MSTV/NAB wants OET-69 expanded with respect to use of vertical antenna patterns.[213] Joint Commenters oppose the use of beam tilt and vertical patterns in interference calculations.[214]

101. AFCCE believes that the OET-69 interference method should be adopted for analog LPTV, TV translator, and Class A analyses to mitigate the concerns of unequal treatment.[215] Greg Best believes that the Longley-Rice interference method should be adopted for analog LPTV and TV translator analyses as well as digital and analog Class A TV analyses.[216] dLR requests that OET-69 methodology be applied to analog LPTV and TV translators (grandfathering existing stations) and

[206] NTA Comments at 12.

[207] AFCCE Comments at 4.

[208] CBA Comments at 11.

[209] NTA Comments at 13.

[210] NTA *Comments at* 13; *dLR Comments at* 4; St. Clair Reply Comments at 4; Sgrignoli Reply Comments at 9.

[211] *See* Greg Best Comments at 5 (suggesting that specific antenna types be added to the table of antennas for OET-69).

[212] AFCCE Comments at 3.

[213] MSTV/NAB Reply Comments at 16; *see also* Metrocast Comments at 5-7 (urging that standard vertical patterns are necessary to prevent applicants from specifying unattainable antenna vertical radiation lobes that result in an erroneously low value of a station's effective radiated power to the radio horizon).

[214] Joint Commenters Reply Comments at 15.

[215] AFCCE Comments at 4.

[216] Greg Best comments at 5.

modified to include intermodulation interference, while Joint Commenters oppose incorporating intermodulation interference.[217] Cox/Liberty opposes any change in protection of full-service stations by LPTV and TV translator stations.[218] Paxson opposes using the 2% *de minimis* interference standard for LPTV, Class A TV, and TV translator protection of full-service stations.[219]

102. The use of a single interference prediction methodology is preferable; based on the record, it is apparent that it should be the DTV methodology. This methodology is widely available and has been employed extensively for full-service TV and DTV application processing. All parties support allowing use of the DTV methodology – either as a standard approach or at least with regard to rule waiver submissions - and it provides more accurate results. To the extent that an application proposal might pass a contour overlap analysis but fail a DTV methodology analysis, we do not believe the public would be served by approving such a facility.

103. Further, it would be inappropriate to allow these secondary service stations to be authorized on the basis of the full-service DTV *de minimis* criteria (2% / 10%) to determine unacceptable predicted interference to full-service analog and DTV stations. Instead we conclude that the tolerance we have established elsewhere for "no interference" (being less than 0.5%) is an appropriate standard here. In the full-service context, the benefit offsetting the loss of service to interference was the flexibility to construct DTV stations more quickly in order to start the DTV transition and, in most cases, the ability to provide new DTV service to a substantially larger number of viewers. In the digital LPTV and TV translator context, the entire new service area may contain fewer people than the 2% of the population served by the interfered-with full-service station. We agree, however, that the 2% criteria is appropriate for protection of other secondary services (*i.e.*, analog and digital LPTV and TV translator stations). The 2% criteria applied between low power stations involve much less interference than in protecting a full-service station, and the 2% criteria will allow proposed new digital low power stations flexibility to serve more people. In this regard and others (*e.g.*, 1 km maximum grid resolution), we are largely adopting the AFCCE recommendations for analysis of digital LPTV and TV translator station proposals. We will also permit digital Class A stations to protect digital LPTV and TV translator stations on the same basis. Because of their technical similarities to digital LPTV stations, we will amend the Class A rules to specify that application acceptance studies of digital Class A applications will be based on the DTV interference prediction methodology, as adapted for study of digital LPTV and TV translator applications.

104. Regarding vertical radiation patterns, we are hesitant to make the digital LPTV/TV translator procedures significantly more complicated than those for full-service stations (*i.e.*, by considering use of vertical patterns of the transmitting antennas proposed in station applications). If in the future we develop an ability to account for actual vertical radiation patterns and related beam tilt in the full-service DTV context, we will consider applying that ability in the digital LPTV and TV translator context. We remain convinced that the assumed vertical patterns in Table 8 of OET Bulletin 69 are not appropriate for LPTV and TV translator stations, but based on the record before us, we do not have suitable replacement patterns to adopt. As a temporary measure, we will assume (for predicting both service and interference) that the downward relative field strengths for digital and analog LPTV and TV translator stations, and digital and analog Class A TV stations is double the values specified in OET

[217] dLR Comments at 5; Joint Commenters Reply Comments at 14.

[218] Cox/Liberty Reply Comments at 4.

[219] Paxson Reply Comments at 5.

Bulletin 69, Table 8, up to a maximum of 1.000.[220] We are inclined to adopt a revised procedure in the future if parties develop and propose realistic alternative vertical patterns, including the shifting of relative field strength values to account for electrical antenna beam tilting.

105. For processing analog LPTV, TV translator, and Class A TV applications, we will continue to allow contour overlap analysis, but specifically also allow an optional showing based on DTV methodology without a requirement to seek a rule waiver. Based on the record in this proceeding, we are not prepared to replace the analog spacing requirements with DTV methodology standards.

d. Interference Agreements

106. In the *Notice* we noted that interference agreements that supercede compliance with the LPTV interference protection standards are permitted among LPTV, TV translator, and Class A TV stations.[221] Additionally, we noted that applications for LPTV and translator facilities predicted to interfere with full-service stations may be granted with the written consent of the affected stations and that such consent does not obviate the responsibility of the LPTV or translator station to eliminate interference caused to over-the-air reception of the full-service station, wherever its signal is regularly viewed. We sought comment on applying these provisions to digital LPTV and TV translator stations.

107. Several parties support continuing to accept interference agreements between the concerned parties.[222] MSTV/NAB opposes interference agreements among digital LPTV and TV translator stations or between them and full-service stations, expressing concern that interference agreements between two parties could adversely affect third parties that are not involved in the agreement.[223] On balance, we believe that permitting interference agreements for these stations will provide a useful means of accommodating technical and non-technical local conditions. Fundamentally, these will be secondary stations, required to accept interference from, and not cause it to, primary stations. MSTV/NAB has not indicated how an interference agreement between two stations in the LPTV service could adversely impact a full-service broadcaster. Indeed, the increased risk of interference to others attributable to interference agreements will be negligible and, as with other situations where we have allowed interference agreements, we retain the discretion to disapprove agreements that do not serve the public interest.[224]

e. Co-located Operation on Adjacent Channels

108. In the *Notice* we pointed out that the analog contour protection standards do not allow a new or modified LPTV or TV translator station to be located within the protected contour of a TV broadcast, LPTV, TV translator, or Class A TV station on a first adjacent channel or the fourteenth or

[220] To illustrate: For UHF DTV stations at a depression angle of 2 degrees, Table 8 specifies a relative strength field value of 0.690, but we will assume a LPTV or TV translator relative field value would be 1.000. For UHF DTV stations at a depression angle of 6 degrees, Table 8 specifies a relative field strength value of 0.150, but we will assume a LPTV or TV translator relative field value would be 0.300.

[221] 47 C.F.R. §§ 74.703(a), 73.6022.

[222] Parsons Comments at 13; APTS/PBS Comments at 5; dLR Comments at 5; NTA Reply Comments at 15.

[223] MSTV/NAB Comments at 17-18.

[224] *See, e.g.*, 47 C.F.R. § 74.623(g).

fifteenth channel above that of the potentially affected station.[225] As we sought ways to assist LPTV and TV translator operators displaced by new DTV services, we also stated that we would consider co-located or "nearly co-located" waiver requests where applicants could demonstrate that such stations' replacement channel proposals would not cause any new interference.[226] We also noted in the *Notice* that co-locating adjacent channel operations may offer one of the most promising opportunities for identifying available channels for digital TV translator and LPTV service.[227]

109. We sought comment on proposals related to co-located adjacent channel operations involving digital LPTV and TV translator stations, including the first adjacent channel to DTV and analog TV and the following channel relationships to analog TV channels, where N is the analog channel: N-2, N+2, N-3, N+3, N-4, N+4, N-7, N+7, N-8, N+8, N+14, N+15. We indicated that the DTV methodology permits interference analysis of such proposals for co-located operations so a waiver of the LPTV interference rules would not be necessary, but we also sought comment on whether we should require a waiver showing, for example, to account for the transmitting antenna vertical radiation pattern concerns expressed above. We suggested that if the existing contour protection methodology is selected, considering co-located adjacent channel operations on a waiver basis would seem to be appropriate. In either case, we proposed permitting co-located adjacent operations on the basis of written agreements among the affected parties. We also asked whether the term "co-located" should include only transmitting antennas located on the same tower or other supporting structure or, alternatively, on structures located within a particular proximity and whether we should limit co-location to particular classes of adjacent channel station, such as only to LPTV and/or TV translator stations.

110. CBA suggests that collocation of first adjacent channel stations should be permitted where their power and antenna patterns do not diverge greatly.[228] AFCCE agrees with waiving rules to allow operation on an adjacent channel to an analog station provided the relevant D/U ratios are satisfied, OET-69 methodology is employed, and the stations are located within 2 kilometers of each other.[229] Other commenters support co-located adjacent channel operations and suggest that we consider stations to be co-located that are geographically separated by distances ranging from 2 to 10 kilometers.[230] As discussed above, MSTV/NAB opposes allowing digital LPTV and TV translator stations within the noise-limited contour of first adjacent-channel analog and digital full-service stations.[231]

111. As discussed above, we are adopting the DTV methodology for determining whether digital LPTV and TV translator proposals adequately protect authorized stations from interference. The interference protection provided by the DTV methodology with respect to any co-located (at whatever separation distance) facilities renders additional restrictions unnecessary. Moreover, LPTV operations on a channel adjacent to a full-service analog or digital TV station will usually be avoided because the higher power full-service station has a much greater chance of interfering with the LPTV or TV

[225] 47 C.F.R. §§ 74.705(b), 74.707(b) and 74.708(c). In addition waivers may be requested based on the applicable D/U protection ratios not being exceeded at any location within the co-located stations' protected contour.

[226] DTV *Sixth Report and Order*, ¶ 146.

[227] *Notice*, 18 FCC Rcd at 18387-8.

[228] CBA Comments at 11.

[229] AFCCE Comments at 4.

[230] dLR Comments at 6; Joint Commenters Comments at 13; St. Clair Reply at 3; Sgrignoli Reply Comments at 9.

[231] MSTV/NAB Comments at 16.

translator service than vice versa. In addition, the LPTV or TV translator remains secondary. Under the circumstances and recognizing the conservative nature of the adjacent channel D/U ratios discussed above, the prohibition MSTV/NAB seeks is unnecessary.

f. Carrier Frequency Control and Offset

112. "[W]here a low power television station or TV translator station is operating on the lower adjacent channel within 32 km of the DTV station and notifies the DTV station that it intends to minimize interference by precisely maintaining its carrier frequencies, the DTV station shall cooperate in locking its carrier frequency to a common reference frequency and shall be responsible for any costs relating to is own transmission system in complying with this provision."[232] While full-service DTV broadcasters are required to maintain a precise frequency separation between their 8VSB pilot frequency and the visual carrier frequency of any nearby lower adjacent channel analog TV station, we sought comment in the *Notice* on whether we should extend this requirement to digital and lower first adjacent channel analog LPTV and TV translator stations within some geographic proximity.

113. We also sought comment on any other technical means for demonstrating interference avoidance that could facilitate channel availability for digital LPTV and TV translator service without compromising the interference protection rights of other stations. In that regard, we asked about other changes to our LPTV service interference protection rules that could provide additional spectrum opportunities without unduly risking impermissible interference such as, for example, requiring all analog LPTV and TV translator stations to operate with a frequency offset.[233] Analog Class A TV stations are required to operate with a frequency offset.

114. Greg Best believes locking the DTV pilot to the visual carrier of a lower first adjacent analog station is not worth the benefit gained, due to a combination of the lower output powers of analog LPTV and translator stations and the relatively high expense involved.[234] Describing the results of ATTC tests of the "color beat" that led to this requirement, Gary Sgrignoli notes that this TV picture impairment affected some TV sets (but not all) and that it was most noticeable at large interfering signal levels. He suggests that if the D/U ratios within a station's service area are sufficiently large ("DTV signal much lower than NTSC by at last 10 dB), the color beat effect should not be a problem, even without any DTV pilot carrier frequency offset."[235]

115. CBA suggests the time has come to require mandatory frequency offset as a way to minimize interference because the spectrum is becoming crowded, decreasing the justification for allowing stations to operate without offset.[236] CBA suggests that where an applicant is constrained because another station does not operate with offset, the applicant should be permitted to offer to pay for the cost of offset equipment. If the other station does not accept the offer, then CBA suggests that

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[232] *Notice*, 18 FCC Rcd at 18389, citing 47 C.F.R. § 73.622(g)(2).

[233] Frequency offsetting involves positioning the TV station's signal so that its visual carrier frequency is at its nominal position of 1.25 MHz above the lower edge of a TV channel (zero offset), 10 kHz above the nominal frequency (plus offset), or 10 kHz below (minus offset). For stations with the same (or no) offset, co-channel interference is predicted to occur when the D/U ratio is 45 dB, while for stations with different offsets the co-channel interference D/U ratio is reduced to 28 dB.

[234] Greg Best Comments at 6; *see also* APTS/PBS Comments at 4 (arguing that we should not require frequency offset for digital LPTV and TV translator stations where a nearby analog station is on the lower adjacent channel).

[235] Sgrignoli Reply Comments at 10.

[236] CBA Comments at 11.

station should be required to accept the resulting interference. CBA argues there should also come a point when the acceptance and installation of offset equipment should become mandatory because the existing station may cause serious interference to the applicant that could be avoided by offset. CBA also urges that the Commission immediately forbid the installation of any new or replacement transmitter or exciter that does not incorporate the capacity for offset.[237] Several other commenters agree.[238] Parsons, on the other hand, claims a requirement for all TV translator stations to operate with a frequency offset would be an economical disaster and would very rarely be needed in the rural environment.[239] Joint Commenters indicate that frequency offsets should be required in urban areas, but not in rural areas.[240]

116. First, we conclude that the burden of requiring a digital LPTV or TV translator licensee to maintain the pilot frequency of its 8-VSB DTV signal to a specified offset with respect to the visual carrier of an analog LPTV or TV translator station on the lower first adjacent channel is not supported by the record. Such a requirement would be unlikely to significantly improve the service quality or coverage of the analog station. If a situation develops where there appears to be more adjacent channel interference than expected to the service of a lower first adjacent channel analog station, we encourage the licensees to cooperate in efforts to reduce the interference by attempting to achieve and maintain a more desirable frequency offset between the DTV pilot and the analog TV visual carrier.

117. Where analog LPTV and TV translator stations operating without a nominal frequency offset prevent the proposed service of a new or modified LPTV, TV translator or Class A station, we agree that the time has come to require that station to maintain a designated offset. Where non-offset stations are so remotely located that no additional service proposals would be obstructed, we also agree that the expense of installing "offset" equipment would be unnecessary. We address only the situation where protection of an existing analog LPTV or translator station without a frequency offset (*i.e.*, plus 10 KHz, minus 10 kHz or zero) would render an application proposal specifying an offset unacceptable for filing. In this situation, the proposed facilities will be analyzed with respect to co-channel "non offset" stations based on both the 45 dB D/U ratio applicable for non offset operations and the 28 dB D/U ratio that applies in the analysis of stations specifying different offsets.[241] In such cases, the application proposal will be considered acceptable if it provides adequate protection based on the 28 dB "offset" D/U ratio. The existing non-offset station will then be required to install at its expense offset equipment and notify us that it has done so or, alternatively, that it has reached an interference agreement with the new station.[242] In the event the existing station does not cooperate in this regard, we will direct it to operate with a frequency offset different than that specified in the application proposal.[243]

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[237] *Id.* at 12.

[238] AFCCE Comments at 4; Greg Best Comments at 6; Venture Comments at 5; Commercial Broadcasting Reply Comments at 6.

[239] Parsons Comments at 13.

[240] Joint Commenters Comments at 12.

[241] The 45 dB D/U ratio also applies to predictions of co-channel interference between stations specifying the same frequency offset.

[242] The existing non offset station would be required to accept the additional interference associated with maintaining its non offset operation.

[243] In the proceeding that created the Class A TV service, we established a time frame within which all Class A stations were required to operate with a frequency offset. During the interim period, we established a policy that directed Class A station licensees, permittees and Class A-eligible LPTV applicants to operate their station with a carrier frequency offset at the request of a displaced Class A station, displaced Class A-eligible LPTV station or (continued....)

g. Protection of Land Mobile Radio and Other Primary Services

118. As explained in the *Notice*, LPTV and TV translator stations are authorized on a secondary non-interfering basis to certain land mobile operations and other primary services. These include public safety and other new wireless services that are operating or will operate in the spectrum comprising TV channels 52 – 69.[244] With regard to digital LPTV and TV translator operations, we did not propose to alter the interference priorities and remediation provisions identified in our rules.

119. Section 74.709 of our rules specifies criteria for protecting land mobile radio operations on TV channels 14-20 in the vicinity of 13 large cities. Generally, an application for a new or modified LPTV or TV translator facility will not be accepted if it proposes (1) a transmitting antenna site on a co-channel or first adjacent channel within 130 km of these cities, or (2) the proposed LPTV or translator facilities would produce a field strength exceeding 52 dBu at the protected contour (generally extending the 130-km distance) of a co-channel land mobile assignment or 76 dBu at the protected contour of a first adjacent channel land mobile assignment.[245] We requested comment on the suitability of these protection requirements for digital LPTV, TV translator, and Class A TV stations.

120. We also proposed to subject digital LPTV, Class A, and TV translator digital stations to the requirements of Section 73.1030, which requires that applicants for authority to construct a new station in the vicinity of radio astronomy, research, and certain receiving installations, such as FCC monitoring stations and the Department of Commerce's radio receiving zone on Table Mountain, Colorado, notify the affected installation(s) and give consideration to providing protection to the installation(s) against interference.[246] In addition, we requested comment on whether it might be appropriate to subject digital low power television stations to those requirements only with regard to the more sensitive operations of the radio astronomy observatories at Green Bank, West Virginia, and Arecibo, Puerto Rico.[247] In this regard, we also observed that digital low power television stations will operate with much lower ERP levels than full-service DTV stations and therefore would appear to pose less of a concern for radio receiving sites and FCC monitoring stations.

121. APCO urges that we re-examine the adequacy of our current interference rules for protecting land mobile operations from DTV, stating that some DTV stations have caused interference to public safety land mobile operations in the 470 to 512 MHz band.[248] Other parties that oppose digital translator and LPTV station use of channels 52-69 also question how protection would be afforded to new

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applicant or allotment petitioner for a new NTSC television station. For purposes of such accommodations, we also reserved the right, on a case-by-case basis, to modify the license of a TV translator or non-Class A LPTV station, subject to the provisions of the Section 316 of the Communications Act. *See Establishment of a Class A Television Service, Memorandum Opinion and Order on Reconsideration*, 16 FCC Rcd 8244 (2001).

[244] The *Notice* also indicated that LPTV and translator stations must not interfere with reception at a cable TV headend or output channel of a cable TV, MDS, or ITFS system converter, if the cable, MDS or ITFS operator is the "earlier user," and must protect stations in the Off-Shore Radio Service if proposing to use channels 15, 16, 17 or 18 by not locating within a specified area near the Gulf of Mexico.

[245] 47 C.F.R. § 74.709(a)-(d). These provisions also apply to Class A TV stations.

[246] *Notice*, 18 FCC Rcd at 18390-91; *see also* 47 C.F.R. § 73.1030.

[247] The National Telecommunications and Information Administration ("NTIA") has requested that we subject digital low power television stations to Section 73.1030 of our rules.

[248] APCO Comments at 3.

primary licensees on those frequencies.[249] Otherwise, commenters did not address the related issues raised in the *Notice*.

122. As proposed, we will require digital LPTV, TV translator, and Class A TV stations to comply with the requirements of Section 73.1030 of the rules concerning interference to radio astronomy, research and receiving installations. We will also require compliance with the criteria specified in Section 74.709 of the rules for protecting land mobile radio operations on TV channels 14-20 in the vicinity of 13 large cities. While we are aware of indications that some DTV stations may be causing some interference to land mobile operations on channels 14-20, those situations involve full-service DTV stations. The criteria we are adopting herein come from our rules for the LPTV and TV translator services (*e.g.*, ERP limits). In addition, digital LPTV and TV translator stations will have a secondary status that will require the correction of interference to a primary service (including mobile operations) even if that means the secondary station must cease operating in order to eliminate the interference.

123. We have concluded that it is necessary to permit limited operation of digital translator and LPTV stations in the 700 MHz bands. Such operations will result from the digital conversion of stations' authorized analog channels and, to a lesser extent, from operations on digital companion channels. As a result, it is likely that some stations will seek temporary operations on spectrum that has been licensed to new wireless service providers or the immediately adjacent spectrum. Some of these stations may be located within the geographic service boundaries of a wireless licensee, while others may be located at some distance beyond the boundaries. We have permitted wireless licensees substantial flexibility to provide a variety of communications services involving both fixed-station and mobile/portable operations, employing a wide range of signal architectures and modulation formats. In light of this service flexibility, we decline here to develop specific interference prediction criteria from which to protect wireless operations from digital stations in the low power television service.

124. We make clear, nonetheless, that any interference caused by a digital LPTV or TV translator station to public safety operations or the services provided by commercial or public safety wireless licensees in the 700 MHz bands must be eliminated, and that the offending LPTV or translator station must cease operation immediately upon notification by any primary wireless licensees and once it has been established that the LPTV or translator station is causing the interference. We will add these provisions to our LPTV rules (Section 74.703). We will also place a special condition on all digital construction permits and licenses for channels 52-69, reminding permittees and licensees of their interference remediation responsibilities.

125. We are requiring applicants for digital LPTV or TV translator station operations on channels 52-69 to meet certain notification and coordination requirements with respect to public safety and commercial licensees whose operations could be potentially affected by interference from the proposed digital television facilities. We believe the requirements are conservative, considering that for many stations, the radio horizon for their facilities will fall well short of the distances we are adopting. Also, the substantial out-of-channel emission attenuation requirements we are adopting for digital low power stations should substantially mitigate the potential for adjacent channel interference. To avoid wasted expenditure of time and resources, we are requiring applicants for all digital LPTV and TV translator stations to notify all potentially affected wireless licensees prior to applying for digital facilities. Moreover, we are requiring the coordinated-use of agreements for applicants proposing to operate digital LPTV or translator stations on the public safety-designated spectrum (*i.e.*, TV channels 63, 64, 68 and 69).

126. As proposed in the *Notice*, we will extend to digital LPTV and TV translator station

[249] Access Spectrum Comments at 5; Adams Telcom Comments at 2; Motorola Comments at 4.

operations all of the interference remediation provisions in Section 74.703 applicable to analog LPTV service stations.

F. Authorization of Digital LPTV and TV Translator Stations

1. On-Channel Digital Conversions

127. In the *Notice* we stated that some licensees of analog LPTV and TV translator stations may wish to convert to digital operations ("flash-cut") on their authorized channels.[250] We sought comment whether to authorize an on-channel digital conversion as a "minor" facilities change provided: (1) the proposed digital facility would not involve a channel change not related to channel displacement, and (2) the protected digital signal contour of the proposed facility would overlap some portion of the protected contour based on the station's analog authorization.[251] We proposed that, consistent with our rules for analog minor change applications, we would grant on-channel digital conversion applications on a first-come, first-served basis under the current processing procedures.[252]

128. We sought comment on whether on-channel digital conversion applications having predicted interference conflicts with other applications filed the same day would be mutually exclusive and whether such mutually exclusive applications would be subject to the auction process. We also sought comment on how to resolve mutually exclusive digital conversion and channel displacement relief applications. We noted that displacement applications are accorded a higher priority than applications for new or modified facilities, regardless of which application was filed earlier.[253] We asked whether a digital conversion application should be subject to dismissal if it becomes mutually exclusive with a displacement application of an analog or digital LPTV, TV Translator or Class A licensee or permittee.[254]

129. Those commenters that supported allowing low power broadcasters to seek digital facilities also supported our proposal to permit incumbent station operators to flash-cut to digital on their existing channel by filing a digital conversion application.[255] Bonneville states that on-channel digital conversion, "where it is necessary and appropriate, is spectrally efficient because the operator requires no additional spectrum to transition to digital service."[256] Bonneville also points out that such a digital conversion is more cost effective because it would save the operator the "expense of powering both an analog and digital signal during the transition."[257] Finally, the MSTV/NAB and Bonneville note that on-channel conversion is a less intrusive manner that allows the station the flexibility to decide when to change to digital operations once it determines that DTV receiver penetration warrants conversion.[258]

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[250] *Notice*, 18 FCC Rcd at 18401.

[251] *Id.* We noted that this contour overlap constraint also applies to analog LPTV and TV Translator minor change applications. *See* 47 C.F.R. § 73.3572(a)(2).

[252] *Notice*, 18 FCC Rcd at 18401.

[253] *Notice*, 18 FCC Rcd at 18041 *citing* 47 C.F.R. § 73.3572(a).

[254] *Notice*, 18 FCC Rcd at 18042.

[255] *See* CBA Comments at 5; NTA Comments at 22; APTS/PBS Comments at 6; MSTV/NAB Comments at 12; Bonneville Comments at 6; KM Communications Comments at 6-7; Fox Comments at 4-5; Paxson Comments at 7; Cavalier Comments at 14. As outlined herein, some commenters believe this is the only method by which low power broadcasters should be permitted to convert to digital.

[256] Bonneville Comments at 6.

[257] *Id.*

[258] MSTV/NAB Comments at 13; Bonneville Comments at 6.

There was also general support for the concept that digital conversion applications be filed as minor change applications.[259]

130. We will allow existing LPTV and TV translator stations to file digital conversion applications as minor changes to their existing analog facilities. We adopt the requirement that (1) the proposed digital facility not involve a channel change unrelated to channel displacement, and (2) the protected digital signal contour of the proposed facility overlap some portion of the protected contour based on the station's analog authorization. We will also define in this manner minor facilities changes of digital LPTV and TV translator stations. We will permit the filing of on-channel digital conversion applications on a first-come, first-served basis.[260] We define "existing low power station" as one that is either licensed or has a valid construction permit.[261] As outlined elsewhere herein, LPTV and TV translator on-channel digital conversions will be filed on FCC Form 346 and will be treated as minor facilities changes.[262]

131. We will not require stations proposing on-channel digital conversions to notify full-service DTV stations. The MSTV/NAB requests that we adopt a requirement that stations undertaking on-channel digital conversions notify all full-service stations within 150 miles of the low power station's transmitter site at least 60 days before filing for the conversion.[263] MSTV/NAB argues that such a requirement is necessary to safeguard against interference to full-service broadcasters' DTV facilities.[264] We reject this proposal as an unnecessary burden on low power stations. Low power stations proposing digital conversions will be required at the application stage to meet the interference protections we adopt herein with respect to full service NTSC and DTV stations. We do not anticipate unexpected interference problems from such on-channel conversions and, in the event that such interference is brought to our attention, it will be resolved expeditiously.

132. We will not adopt the proposal of the CBA and NTA that incumbent low power broadcasters be permitted to convert to digital on their existing analog channel by simply notifying the Commission "after the fact" as long as the digital effective radiated power (ERP) not exceed 25% of the authorized analog ERP and there would be no other changes to the authorized analog facilities. Because it is likely that spectrum available for digital low power operations will be limited, and applicants would be likely to propose various means of interference avoidance, the need for prior engineering review to ensure compliance with our interference protection provisions will be greater in this case. Low power stations must, therefore, file an application and obtain prior Commission approval for on-channel digital conversions.[265]

133. We will permit existing stations to file digital on-channel conversion applications at any

[259] *See, e.g.*, CBA Comments at 8.

[260] *Notice*, 18 FCC Rcd at 18041.

[261] *See* CBA Comments at 6. We will not adopt, as suggested by the CBA, a processing priority for digital conversion applications filed by licensed low power stations over digital conversion applications filed by valid construction permit holders. We consider both to be incumbent stations.

[262] On-channel digital conversions of authorized Class A stations are filed on FCC Form 301-CA.

[263] MSTV/NAB Comments at 19.

[264] *Id.*

[265] We have no experience with the station operations permitted on this basis and, therefore, to ensure compliance with our interference prediction criteria, will not permit station licensees to seek digital on-channel conversions as a modification of a station license. *See* 47 C.F.R. § 73.1690.

time following the effective date of the rule changes in this proceeding and Office of Management and Budget approval of revisions to the application form necessary to accommodate digital requests.[266] No commenter advocates that we delay opportunities to file such applications. Because such filings do not involve the use of new channels, we do not find it necessary to wait until certain issues surrounding the DTV transition of full-service broadcasters have been resolved. Existing low power broadcasters that wish to immediately convert to digital on their analog channel may do so or they may wait until a later time to determine if additional channels are available.

134. We adopt the following minor change processing rule for digital LPTV and TV translator displacement applications filed to replace channels that are displaced by a full-service NTSC or DTV station or by a 700 MHz commercial wireless or public safety operation. Such applications may propose a change in transmitter site of no more than 30 miles from the reference coordinates of the existing station's community of license, as provided in Section 76.53 of our rules.[267] This will help to prevent applications from using the displacement process to propose greater than needed modifications to their facilities.

135. We address elsewhere the issue of how to deal with mutually exclusive digital applications and resolve mutual exclusivity through the auction process. With respect to analog and digital displacement applications, we will afford these applications a priority over applications for new or modified digital facilities. That is, an application for new or modified digital facility or for digital conversion shall be subject to dismissal if it becomes mutually exclusive with an analog or digital displacement application, including a displaced analog station filing for a digital replacement channel (*i.e.*, filing for a replacement channel and on-channel digital conversion in the same minor change application). In order to continue to encourage digital conversion and place an emphasis on new digital service, we will also place a priority on digital displacement applications over analog displacement applications. That is, an application for analog displacement relief will be dismissed if it becomes mutually exclusive with an application for digital displacement relief.

2. Authorization of Companion Digital Channels

136. In the *Notice* we outlined an approach for authorizing digital channels to LPTV, TV translator and Class A stations based on Part 74 of the rules.[268] We contemplated permitting stations in these services to seek a companion channel with a secondary spectrum use priority, regardless of whether a station's existing analog channel has certain additional protections against interference, as is the case for Class A stations, or is subject to displacement by primary stations, as are translators and LPTV stations. Under this approach, we would not, at this stage of the DTV transition, award Class A stations second channels for digital operation (*i.e.*, channels having Class A primary status requiring protection from full-service stations). To do so would limit our spectrum flexibility to complete the implementation of the full-service DTV transition.[269] We stated that an all-secondary status licensing scheme would also allow us to

[266] *See* Section V., *infra*.

[267] *See* 47 C.F.R. § 76.53.

[268] *Notice*, 18 FCC Rcd at 18404.

[269] A number of commenters suggest that we take this opportunity to transform some or all of the low power broadcasting service into a service having primary regulatory status. As we stated in the *Notice*, "[I]n this proceeding we are not addressing the interference protection priorities, rights and responsibilities of stations in the LPTV service, which are well established. . . . Provisions regarding the secondary regulatory status of stations in the LPTV service are not at issue in this proceeding." *See Notice*, 18 FCC Rcd at 18383, n. 80. Requests to radically alter the nature of the service by authorizing some or all new digital stations on a primary, interference-protection basis are clearly beyond the scope of this proceeding.

use less extensive interference protection standards, thus expanding the number of stations that might obtain an additional channel.

137. We acknowledged that Section 336(f)(4) of the Act sets forth a different approach to providing digital channels for some stations.[270] That section states that the Commission is not required to issue additional licenses for advanced television services to Class A and television translator stations, but must accept applications for such services if they meet certain strict interference criteria. In the *Notice* we sought comment on whether, under Section 336(f)(4), any additional channels awarded under its terms would be protected from displacement by primary stations and, if this status would extend to Class A stations and to translators' digital channels as well.

138. We received a number of comments by incumbent low power broadcasters in support of licensing digital companion channels.[271] In contrast, full-service broadcasters and some 700 MHz wireless providers oppose allowing low power broadcasters to obtain a companion digital channel, urging that we provide only that these stations may "flash-cut" to digital operation.[272] They maintain that licensing companion digital channels would congest the spectrum, complicate the "re-packing" of the core television channels and the clearing of the 700 MHz band, risk interference to DTV broadcast operations, and divert needed FCC resources from the full-service DTV transition. The CBA responds that full-service stations have had more than six years to file for their digital facilities and make facilities modifications or DTV channel allotment changes.[273] The CBA states that the DTV transition is not, as MSTV/NAB suggests, at a crossroads but is instead "nearing the finish line."[274] The NTA classifies the "complication to re-packing" argument as "spurious," arguing that if there are no channels available in a particular area, then low power broadcasters will not be able to apply for a companion digital channel.[275] It concludes that awarding digital low power channels on a secondary basis will have no effect on the full-service DTV transition or the efforts to clear the 700 MHz band.[276] As for possible interference to full-service DTV facilities and 700 MHz licensees, San Bernardino County remarks that the low power services "have a record of non-interference that holds every promise for expansion without significant new problems."[277]

139. With respect to the strain on Commission resources that may occur if we permit low power broadcasters to apply for a companion digital channel, the NTA notes that the Commission has a separate staff to process low power applications and that it is "hard to imagine how additional applications to be processed by this separate staff may affect the Commission's resources."[278] San Bernardino County

[270] *Notice*. 18 FCC Rcd at 18407.

[271] *See, e.g.*, CBA Comments at 3 and Reply Comments at 4-7; NTA Comments at 29 and Reply Comments at 5-8; APTS/PBS Comments at 4; Fox Comments at 4-5; Joint Commenters Reply Comments at 39-47; San Bernardino County Comments at 4 and Reply Comments at 3-5; Bruno Reply Comments, seriatim; Commercial Reply Comments, seriatim; Tiger Eye Reply Comments, seriatim.

[272] *See, e.g.*, MSTV/NAB Comments at 2-4 and 9-20 and Reply Comments 1-5; Venture Comments at 2-3 and 7; Annapolis Comments at 2; International Comments at 4; Word of Life Comments at 2; Cox Comments at 3-4; Paxson Comments at 6-7 and Reply Comments 2-3.

[273] CBA Reply Comments at 3.

[274] *Id.* at 3-4.

[275] NTA Reply Comments at 6.

[276] NTA Reply Comments at 7; *see also* Joint Commenters Reply Comments at ¶ 40..

[277] San Bernardino County Reply Comments at 4.

[278] NTA Reply Comments at 7.

adds that the processing of applications for new service to the public "always involves an expenditure of administrative resources, albeit a tiny one compared with the beneficial effects for new licensees, manufacturers, program producers and the public."[279]

140. The opposing commenters also argue that Section 336(f)(4) does not require grant of a second digital channel or explicitly permit non-Class A LPTV stations to apply for these channels. The Joint Commenters respond that the statute is clear that the Commission should accept applications for DTV channels from Class A stations.[280] The Joint Commenters argue that, for LPTV stations, the statute neither provides nor denies the opportunity to file an application.

141. We will allow permittees and licensees of LPTV, TV translators and Class A stations to seek a companion channel for their digital operation on a secondary basis.[281] We agree with the CBA that low power stations "serve the same viewers as full-service stations and they face all the same problems over time as the universe of television receivers evolves toward digital technology."[282] Allowing opportunities for companion analog and digital channel operations would, we believe, facilitate the digital conversion of many stations in the LPTV service. We are concerned that flash-cutting by all low power stations could leave numerous rural viewers without free over-the-air television service and put many low power broadcasters out of business. As the CBA states, "[F]lash-cut from analog to digital operation on a single channel may well be suicidal to a station, because it will instantly cut off a substantial portion of the station's potential audience."[283] We concur with CBA that "[M]ost low power stations operate in rural areas or underserved urban markets where digital set penetration will likely occur at a slower pace. . . A second channel for ramp-up, to attract viewers to digital operation while maintaining the analog operation essential for economic support is at least as important if not more so to Class A/LPTV stations as to full-service stations."[284]

142. Because we will award companion digital channels on a secondary basis, we reject the claims of full-service broadcasters that our action will negatively impact their DTV transition.[285] After broadcasters elect their post-transition DTV channel, we will make further channel adjustments in generating a final DTV Table of Allotments. As they have done throughout their history, LPTV and TV translator station operators will accept authorizations with the understanding that these may be displaced at a later date by a full-service broadcast station (*e.g.*, a station operating on its post-transition DTV channel) and assume the risk associated with secondary status. The NTA notes that the "very limited possibility of future full-service station channel changes is not a reason to delay the adoption of rules for digital

[279] San Bernardino County Reply Comments at 5.

[280] Joint Commenters Reply Comments at ¶ 45.

[281] Similar to the approach we followed for the authorization of full-service digital channels, we will authorize the companion digital channel together with the station's analog authorization as part of a single modified station license.

[282] CBA Comments at 3.

[283] *Id.*

[284] CBA Reply Comments at 5.

[285] Paxson notes that some full-service stations do not have a paired DTV channel and argues that the Commission should focus its attention on outstanding full-service DTV issues instead of using spectrum to award second channels to low power television broadcasters. Paxson Comments at 2-4. The issue of how to address full-service television stations that were not awarded a paired DTV channel will be considered in a future DTV proceeding.

translators."[286] We agree with CBA that providing opportunities for digital companion channels could help "to stimulate digital set penetration, to maximize the public interest through continuation of incumbent services and to avoid the sudden flash-cut loss of analog service in areas that might not be ready for complete digital transition."[287]

143. *Section 336(f)(4).* Class A stations may flash-cut their analog channel to digital operation at any time and retain their primary regulatory status.[288] To provide these stations with the same flexibility as LPTV and TV translator stations, we will permit Class A stations to apply for a companion digital channel, but such channels will be licensed on a secondary basis as an LPTV station. In the *Notice* we recognized that Section 336(f)(4) of the Communications Act describes a different approach to providing digital channels for some stations. In pertinent part, this section reads as follows:

> The Commission is not required to issue any additional license for advanced television service to the licensee of a class A television station under this subsection, or to any licensee of any television translator station, but shall accept a license application for such services proposing facilities that will not cause interference to the service area of any other broadcast facility applied for, protected, permitted, or authorized on the date of filing of the advanced television application.[289]

The *Notice* sought comment on whether the licensing approach set forth in the statute is the only means by which we can authorize additional channels to Class A and translator stations, or whether we may now permit Class A stations to seek second channels for secondary LPTV stations and defer implementation of the 336(f)(4) licensing approach until a later point in the DTV transition. We also asked if there is a way to combine the statutory and the secondary licensing approaches, for example, permitting applications to be filed under both approaches and providing a means for resolving mutually exclusive applications in different classes. We also sought comment on whether additional channels awarded under the statute to Class A stations would be protected from displacement by primary stations and, if so, whether this protection would also extend to digital channels authorized to TV translators.[290]

144. Full-service television broadcasters oppose authorization of second channels with protected status for Class A stations, contending that the statute does not require to Commission to issue such licenses and that to do so would undermine the full-service transition to digital television.[291] Other parties maintain that Congress intended that the Commission award second channels for digital Class A operations under the provisions of Section 336(f)(4).[292] Commenters did not address how we could

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[286] NTA Reply Comments at 8.

[287] *See* CBA Reply Comments at 7.

[288] *See* 47 U.S.C. § 336(f)(4).

[289] *Id.*

[290] *Notice*, 18 FCC Rcd at 18408

[291] *See*, for example, MSTV/NAB Comments at 3-12 (second channels to Class A stations would "make the challenge of accommodating the transition of all full service stations even more difficult by further congesting [the] broadcast spectrum" and, in the event second channels are awarded to Class A stations, 336(f)(4) does not specify that these should have the interference protections of Class A stations).

[292] CBA Comments at 6-7 ("Failure to award primary status both runs contrary to the intent of Congress and creates a negative incentive for an analog operator to invest in high quality digital transmission facilities"); APTS/PBS Comments at 3-5 (submitting that the statute requires acceptance of applications for digital upgrades by (continued....)

combine the two licensing approaches.

145. In creating the Class A TV service, we acknowledged that the statute requires the acceptance of Class A applications for additional DTV licenses, but also concluded that "the plain reading of the CBPA, as well as the legislative history of the Act, does not require us to issue an additional license for DTV services to Class A or TV translator licensees."[293] We also stated that "we should exercise restraint to issuing additional DTV licenses in order to preserve spectrum to accommodate needs associated with the transition of full-service stations to digital service...and that a number of issues are yet to be resolved in future DTV proceedings."[294] As a result, we deferred matters regarding issuance of additional digital licenses for Class A stations to a future proceeding.

146. Significant DTV spectrum matters are yet to be resolved.[295] Indeed, we are approaching a pivotal stage in the transition when full-service broadcasters will be electing their post-transition DTV channels.[296] Under the channel election procedures, DTV broadcasters first will certify their intentions to replicate their NTSC service or maximize their already-authorized service. The majority of stations - those with in-core DTV and NTSC channels – are scheduled to make their initial election in December 2004. The multi-step channel election process will culminate with the development of a post-transition DTV allotment table that will accommodate all full-service TV broadcasters with an in-core DTV channel.

147. More than 600 Class A stations are licensed to operate, many in large metropolitan areas. Permitting these stations to file applications for digital channels with Class A-protected status would introduce uncertainty into the channel election process and complicate our efforts to find channels for broadcasters who are either unable to make an election or to elect a suitable channel (*e.g.*, stations with out-of-core NTSC and DTV channels). [297] Uncertainty would also arise because the CBPA does not explicitly address the interference protection rights and responsibilities of Class A stations authorized a second channel for "advanced television service." [298] During the election process, prospective applicants for digital Class A stations would also face uncertainty as they considered their requirement under 336(f)(4) to protect "any other broadcast facility applied for, protected, permitted or authorized on the date

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translator stations and questioning why Congress would require processing of such applications without authorizing digital service).

[293] *See Class A Report and Order*, 15 FCC Rcd at 6394.

[294] *Id.*

[295] MSTV/NAB urge that we take a "cautious approach" because "[O]nce full power broadcasters begin to migrate to their final digital channels, there will inevitably be unexpected service and interference issues that will need to be worked through, and the Commission needs to conserve adequate spectrum to ensure that these matters can be resolved as effectively as possible." MSTV/NAB Comments at 7.

[296] *See Second Periodic Review of the Commission's rules and Policies Affecting the Conversion to Digital Television, Report and Order*, FCC 04-192, released September 7, 2004.

[297] There are also more than 4700 licensed TV translator stations. In the CBPA, we believe that Congress intended to provide these stations an opportunity to seek a companion channel for digital operations, but with the same secondary regulatory status applicable to their analog station operations; there is no indication to the contrary in the statute or accompanying legislative history.

[298] The CBPA provides analog Class A stations certain protection rights with respect to DTV service maximization and requests for allotments by new entrants, but also stipulates that Class A stations must yield to DTV stations in the event of conflicts arising from technically necessary modifications to DTV facilities or channel allotments. 47 U.S.C. § 336(f)(1)(D).

of filing of [their] advanced television application." In determining the acceptability of such applications, we would anticipate controversies over interference conflicts between proposed Class A facilities and DTV channel elections and service area intentions. We are concerned that such complications could delay the election process and, therefore, prolong the DTV transition.

148. A better course of action, we believe, is to continue to defer awarding second digital channels with protected status to Class A licensees, but also provide opportunities for these licensees to seek digital channels for LPTV station operations. We make clear that Class A station licensees are guaranteed primary status on one of their channels. Class A stations, therefore, will retain Class A regulatory status on the channel they ultimately choose to retain for digital operations. Once the election process has concluded and DTV spectrum and service area issues are settled, we will be in a better position to consider awarding second channels with protected status to Class A station licensees, thereby enabling them to operate paired analog and digital stations for the duration of their digital transition period. [299] We will consider in our next DTV periodic review proceeding issues related to how and when to permit Class A stations to seek companion channels for digital Class A operations or to convert their LPTV digital companion channels to Class A regulatory status.

3. Filing Window for Companion Digital Channels

149. In the *Notice* we tentatively concluded that we should place a high priority on facilitating the digital transition of existing LPTV and TV Translator service.[300] We also stated that we wished to provide opportunities for Class A stations to obtain channels for digital operations. We stated that the digital low power transition should be built around the base of existing analog LPTV, TV translator and Class A stations. We contemplated opening an initial filing window for only incumbent stations to file for digital companion stations. We did not contemplate that such an initial incumbent-only digital companion channel filing window would be geographically restricted. Only after the completion of this initial window, did we anticipate opening additional opportunities for new digital low power stations to be filed on a first-come, first-served basis.[301]

150. The commenters generally supported an incumbent-only digital companion channel filing window.[302] The CBA requests that no applications for new digital stations be permitted until existing stations have had an adequate opportunity to apply for digital channels.[303] Entravision states that "[B]uilding initial digital service around the base of existing analog LPTV, television translator, and Class A stations provides the best means for the Commission to accelerate the DTV transition without disrupting existing services."[304] Cordillera notes that, for full-service DTV transition, the Commission built initial digital service on the base of existing analog stations.[305] Cordillera believes "there is no reason to stray from this approach for low power stations, especially given the public interest benefits that would

[299] *See Notice*, 18 FCC Rcd at 18408, n 181.

[300] *Notice*, 18 FCC Rcd at 18403.

[301] *Id.* at 18404.

[302] *See* Bonneville Comments at 10; CBA Comments at 5 and 7-8; Entravision Comments at 7-8; NTA Comments at 24; Riverton Comments at 6; Vermont Educational Comments at 5; Cordillera Comments at 2-4.

[303] CBA Comments at 5; NTA Comments at 25.

[304] Entravision Comments at 8.

[305] Cordillera Comments at 2.

result."[306]

151. A number of commenters suggests that an incumbent-only filing window be done on a geographic basis and that we first allow applications for digital companion channels in rural areas.[307] San Bernardino County, for example, suggests that we use the same approach used for the first LPTV application freeze in 1982. San Bernardino County states that, at that time, applications were limited to "Phase I" communities, defined as more than 55 miles outside the reference coordinates of 212 ranked markets in the Commission's TV Channel Utilization Report. Later, Phase II was added to the eligible area -- locations outside the reference coordinates of the top 100, followed by Phase III which had no geographic restrictions. San Bernardino County argues that a similar approach should be used for the digital companion channel initial window to ensure that applications are for "places where there is just one established operator, and therefore a reduced likelihood of application conflicts from multiple filers."[308]

152. Based on the support of the public, we will adopt our contemplated filing procedure and allow LPTV, TV translator and Class A station licensees and permittees to file for digital companion channels in an initial filing window. Allowing existing stations to have the first opportunity to obtain digital channels will encourage these stations to take the lead to further the DTV transition. This will also help to reduce possible disruption of service for existing low power stations by allowing these stations the first opportunity to seek available TV channels on which to operate companion digital facilities.[309] Restricting the initial window to applications for digital companion channels will also avoid the difficult task of deciding among mutually exclusive applications for digital companion service by incumbents and new digital low power service by new entrants.[310]

153. This window will be announced by Public Notice that will detail the pertinent filing parameters and procedures. Only existing LPTV, TV translator and Class A TV station licensees and permittees will be permitted to file for digital companion channels during this initial window. We will allow stations to seek only a single digital companion channel for each existing analog channel. In addition, applicants for digital companion channels must propose to serve the community of license of their associated analog facility. Finally, stations will be required at some point - to be determined in a future proceeding - to return one of their two companion channels to the Commission.

154. We will not adopt a geographic approach to the digital companion channel window. As we noted in the *Notice*, many stations, particularly LPTV and Class A stations, are located in and around major cities for which the last opportunity to file for a new station occurred in 1991.[311] This was done to specifically preserve spectrum options for DTV service in the major television markets. We are concerned that limiting the digital companion channel window to only rural areas, as suggested by the NTA, may unfairly limit opportunities for urban LPTV stations to secure available spectrum, which may be most limited in these areas.[312] We find that any digital filing window with geographic restrictions would be inherently unfair to some parties. We agree with the CBA that "wherever the line is drawn between

[306] *Id.*

[307] *See* Bonneville Comments at 10-11; APTS/PBS Comments at 6-8; Joint Commenters Comments at 21.

[308] San Bernardino County Comments at 6.

[309] *See* Vermont Educational Comments at 5.

[310] *See* Joint Commenters Comments at 21.

[311] *Notice*, 18 FCC Rcd at 18403.

[312] NTA Comments at 2.

regions, there will always be someone on the wrong side of that line, whose ability to find a digital channel will be constrained by someone on the other side of the line whose window opened earlier."[313] To encourage the roll-out of low power digital TV service to all areas of the United States, we will only restrict the filing of applications for digital companion channels in the initial filing window to existing stations.

155. At some point after the incumbent-only filing window for digital companion channels, we will permit applications to be filed for new digital LPTV and TV translator stations without eligibility restrictions. Such applications will be received on a first-come, first-served basis (*i.e.*, "rolling one-day windows"). A Public Notice will announce the date for the beginning of this application filing process.

156. In order to stabilize our low power database and to ensure that interested parties are able to identify available channels for digital use, a freeze will be announced on the filing of analog minor change and displacement applications for LPTV, TV translator and Class A stations prior to the beginning of the initial digital companion channel window filing period.[314] The Public Notice will set out the length and terms of the analog filing freeze. After the digital companion channel window has been completed, applications for analog minor change and displacement applications will once again be accepted.

157. Currently, applications for new analog stations or major changes to analog LPTV, TV translator and Class A stations may not be filed.[315] We recognize that some station operators and other entities would like an opportunity to file these types of applications, particularly in those locales with relatively little or no over-the-air television service.

158. With respect to the timing for the filing of applications for digital companion channels, some commenters oppose opening any such application filing opportunity until the full-service DTV transition has advanced to a later stage.[316] These commenters urge us not to allow the filing of any digital low power applications until full-service stations have made their final DTV channel election and the final "re-packed" DTV Table of Allotments has been announced. They are concerned that allowing digital low power applications to be filed before there has been more clarity in the full-service DTV transition would hinder that process as well as the clearing of the 700 MHz band. The CBA and NTA oppose delaying the start of the digital low power transition.[317] APTS/PBS point outs that Congress has appropriated $29 million to the Rural Utilities Service (RUS) to upgrade rural public television facilities including translators.[318] APTS/PBS maintains that a delay in the licensing of digital channels would prevent the implementation of facilities under the RUS program. The CBA states that full-service broadcasters have had more than six years to propose their DTV facilities.[319] The NTA argues that the DTV Table of

[313] CBA Comments at 5, n. 12; *see also* St. Clair Reply Comments at 7.

[314] *See* CBA Comments at 4-5; Riverton Comments at 6.

[315] Additional new Class A stations are limited to those LPTV stations that have already received Class A eligibility status. The remaining Class A-eligible LPTV stations operate on channels 52-69, which are not available to Class A stations under the Community Broadcasters Protection Act of 1999 ("CBPA"). The CBPA stipulates that these stations may seek Class A licenses only upon securing an in-core TV channel.

[316] *See* Paxson Comments at 7-8; Cox Reply Comments at 3; Rural 700 MHz Band Licensees Reply Comments at 4; 700 MHz Advancement Coalition Reply Comments at 5.

[317] CBA Reply Comments at 2-4; NTA Reply Comments at 7.

[318] *See* APTS/PBS' *ex parte* filing dated September 1, 2004, "The Importance of Digital Translators to Public Television and Rural America."

[319] CBA Reply Comments at 3.

Allotments is "largely in final form now and will be even nearer to completion when digital translator applications can first realistically be filed."[320] Commercial Broadcasting Corp. agrees saying that the full-service digital transition "is well on its way."[321]

159. We agree that it is desirable to provide opportunities to obtain digital companion channels as soon as possible. We also believe, however, we should wait until there is additional clarity in the full-service television transition before accepting applications for new digital service, other than through on-channel conversion. After the DTV channel election process for full-service broadcasters has sufficiently progressed, it will become clearer what channels may be available for digital LPTV and TV translator stations.[322] The majority of full-service broadcasters will be making their channel election during the first phase of the process scheduled to occur in December 2004. Subsequently, the Media Bureau will announce by Public Notice the window filing opportunity for digital companion channels and will, at a later date, establish parameters for the filing of additional applications.

4. Mutually Exclusive Applications

160. Should we receive mutually exclusive applications for digital on-channel conversion, digital companion channels or for new digital LPTV, TV translator or Class A facilities, we must resolve mutual exclusivity through competitive bidding.[323] In the *Notice* we stated that applications for new analog LPTV and TV translator stations and major facilities modifications to existing LPTV and TV translator stations are subject to the application filing and competitive bidding or "auctions" procedures given in Section 73.5002 *et seq.* of the rules.[324] That process generally begins with a Commission Public Notice announcing an auction proceeding, including the time period during which all applicants seeking to participate in an auction must file their applications (an "auction filing window"). We sought comment on whether to apply some or all of these procedures to digital LPTV and TV translator applications or whether to adopt new procedures that could better facilitate the transition from analog to digital television service.

161. We also sought comment on whether the auction exemption provisions of Section 309(j)(2)(B) of the Communications Act apply to mutually exclusive applications for new LPTV and TV translator digital stations or where such applications are mutually exclusive with other applications in the LPTV and Class A TV services.[325] We noted that Section 309(j)(2)(B) exempts from auction applications "for initial licenses or construction permits for digital television service given to existing terrestrial broadcast licensees to replace their analog television service licenses."[326] If the exemption applies, we proposed to permit applicants to resolve mutual exclusivities through engineering solutions or settlements.

162. The commenters were uniformly against the use of auctions to resolve mutual exclusivity

[320] NTA Reply Comments at 7.

[321] Commercial Broadcasting Corp. Reply Comments at 7.

[322] *See Second Periodic Review of the Commission's rules and Policies Affecting the Conversion to Digital Television, Report and Order*, FCC 04-192, released September 7, 2004 (providing a procedure and timetable for full-service stations to elect their post-transition DTV channel).

[323] *See* 47 U.S.C. § 309(j).

[324] *Notice*, 18 FCC Rcd at 18402.

[325] *Id. citing* 47 U.S.C. § 309(j)(2)(B).

[326] 47 U.S.C. § 309(j)(2)(B).

among applications for digital low power stations.[327] The CBA states that "mutual exclusivity is a nemesis, particularly for existing stations. Many, if not most Class A/LPTV, will have to struggle to raise capital to construct digital facilities and surely will not have money to bid at auction for a digital channel."[328] Parsons states that rural communities cannot compete in an auction because "the highest bidder always wins."[329] The Joint Commenters state that the Commission avoided having to use auctions for the full-service television DTV transition by finding a companion digital for each station.[330] The Commission should extend the same universal assistance to low power broadcasters seeking DTV channels out of a sense of fairness and equity, the Joint Commenters argue.[331] The Joint Commenters suggest that filing windows be tailored so that applications for stations in rural and urban areas not be mixed. The Rural 700 MHz Band Licensees argue that the auction of digital low power applications would "likely attract a large number of speculators, who are looking to turn a quick profit by reselling their licenses and who may or may not have any intention of providing service to rural customers."[332] Even if auctions are required in this case, Word, the CBA and APTS/PBS encourage the Commission to use engineering techniques to avoid mutual exclusivity.[333]

163. Section 309(j)(1) plainly states that the Commission "shall" use competitive bidding to select among mutually exclusive applications unless one of the exemptions set forth in Section 309(j)(2) applies. Unless we find that one of the auction exemptions applies in this case, we are statutorily mandated to use auctions for applications filed for new LPTV and TV translator digital stations. Some commenters argue that Section 309(j)(2)(B) forbids the use of auctions for such digital stations because they are applications for "initial licenses or construction permits for digital television service given to existing terrestrial broadcast licensees to replace their analog television service licenses."[334] KM argues that the language is clear and unambiguous and it creates no exceptions for the LPTV service.[335] A closer examination of the language of this section reveals that the exemption does not apply to applications for LPTV or TV translator stations. Section 3 of the Communications Act defines the term "analog television service" as "television service provided pursuant to the transmission standards prescribed by the Commission in Section 73.682(a) of its regulations.[336] In addition, the Communications Act defines "digital television service" as "television service provided pursuant to the transmission standards prescribed by the Commission in Section 73.682(d) of its regulations."[337] Under Part 74 of the rules, LPTV and TV translator stations are not required to comply with either Section 73.682(a) or (d). The list of broadcast regulations applicable to the low power television service does not include these rules.[338] LPTV and television translator stations, therefore, were not included in the definitions of "analog

[327] *See, e.g.*, Joint Commenters Comments at 20; CBA Comments at 8-10; APTS/PBS Comments at 7; Parsons Comments at 15.

[328] CBA Comments at 8.

[329] Parsons Comments at 15.

[330] Joint Commenters Comments at 20.

[331] *Id.*

[332] Rural 700 MHz Band Licensees Comments at 14-15.

[333] CBA Comments at 9 *citing* 47 U.S.C. § 309(j)(6)(E); APTS/PBS Comments at 8; Word Comments at 3.

[334] CBA Comments at 9; APTS/PBS Comments at 7-8.

[335] KM Comments at 8.

[336] 47 U.S.C. § 3 (49).

[337] *See* 47 U.S.C. § 153(49)(A).

[338] *See* 47 C.F.R. § 74.780.

television service" or "digital television service" and are not subject to the auction exemption in Section 309(j)(2)(B).[339]

164. We also do not believe it was Congress' intent that the auction exemption apply to applications for new digital LPTV and TV translator stations. The exemption was adopted as part of the Balanced Budget Act of 1997 in conjunction with provisions intended to facilitate the full-service digital television transition. A second digital channel had been allocated by the Commission for each full-service television station and Congress adopted an exemption from the auction provisions to make clear that full-service stations would not be required to bid for their second digital channel. At the time, we had not considered the DTV transition for low power stations. Therefore, we believe it was not Congress' intent that the digital television exemption apply to applications for low power digital channels.

165. As for Class A stations, as we announce herein, we will permit these stations to file an application to either convert to digital on their existing analog channel or for a digital companion channel. Digital companion channels to Class A stations will be licensed on a secondary, LPTV basis and at this juncture operation of companion channels will not be subject to the requirements of Section 73.682(d) of the rules. Because companion channels to Class A stations, like those licensed to LPTV and TV translators, are not subject to Section 73.682(d), they do not fall within the definition of "digital television service," and they are not subject to the auction exemption in Section 309(j)(2)(B). Class A TV stations that choose to convert to digital on their existing analog channel will be licensed on a primary, Class A basis and their converted digital facilities will be subject to the requirements of Section 73.682(d). Class A digital conversion applications, therefore, are exempt from auction. In the event that a Class A digital conversion application is found to be mutually exclusive with other such application(s) or digital companion channel application(s), we will allow the parties a period of time to find an engineering solution to resolve their mutual exclusivity. Failure to do so will result in the dismissal of the applications in the mutually exclusive group.

166. We will utilize the existing Part 1 and broadcast auction and filing procedures set forth in the rules with respect to mutually exclusive applications for digital LPTV and TV translator stations.[340] The initial digital companion channel window will be conducted as an "auction filing window." During the window, existing stations seeking a digital companion channel will submit a "short-form" application (FCC Form 175) together with required certifications, information and exhibits, including technical data on the proposed digital facility necessary to determine mutually exclusive applications (*i.e.*, applications that cannot all be granted in compliance with out interference protection standards). Short-form applications determined to not be mutually exclusive and winning bidders from the auction will be notified by Public Notice and required to submit a "long-form" (FCC Form 346) that will be processed according

[339] We note that Section 309(j)(2)(C) of the Act provides a separate auction exemption for noncommercial educational (NCE) stations. *See* 47 U.S.C. § 309(j)(2)(C). The Commission, however, found that LPTV and TV translators are not exempt under this section because these stations are not licensed on a NCE basis. *See Reexamination of the Comparative Standard for Noncommercial Educational Applicants*, 18 FCC Rcd 6691, 6697 (2003) *recon. pending* (*Noncommercial Report and Order*),. The Commission did, however, find that LPTV and TV translators "owned and operated by a municipality and which transmit only noncommercial and educational programs for education purposes" are exempt from auction under Sections 309(j)(2)(C) and 397(6)(B) of the Act. We will follow the procedures established by the Commission for resolving applications filed by municipalities that are determined to be mutually exclusive with other applications. *Noncommercial Report and* Order, 18 FCC Rcd at 6700.

[340] *See* 47 C.F.R. §§ 1.2100 *et seq.* and 73.5000 *et seq*; *see also Implementation of Section 309(j) of the Communications Act – Competitive Bidding for Commercial Broadcast and Instructional Fixed Service Licenses*, 13 FCC Rcd 15920 (1998).

to the rules and be subject to the filing of petitions to deny. Filing of digital conversion applications and displacement relief applications will not be permitted during the digital companion channel auction filing window. Only those applications determined to be mutually exclusive will be scheduled for auction.

167. While we are statutorily required to use auction procedures to select among mutually exclusive applications for LPTV and TV translator stations, we intend to provide an opportunity to utilize engineering solutions and settlements to resolve conflicts among applications. CBA argues that a settlement opportunity may provide licensing efficiency and avoid undue delay initiating digital low power service.[341] Consistent with past practice with other secondary LPTV applications that are subject to auction (*e.g.*, Auction No. 81), the Media Bureau may provide applicants with a limited period after the filing of short-form applications to enter into settlement agreements[342] and/or to submit engineering amendments to their proposals.[343]

5. Digital Station Construction Period

168. In the *Notice* we proposed applying to digital LPTV and TV translator stations the construction period provisions applicable to analog stations in these services.[344] Under the analog rules, each original construction permit for a new station or changes to an existing station specifies a period of three years from the date of the issuance of the original construction permit for completion of construction and filing of a license application. The grant of an application to modify the construction permit does not extend the expiration date of the underlying construction permit.

169. Commenters supported a three-year construction period for digital LPTV, TV translator and Class A stations. [345] APTS/PBS urges retention of the three-year period stating that "many public television stations will be seeking federal funding assistance for digital translator and/or booster construction. . . (and that) frequently the time that it takes from filing of the grant application to an award is nearly a year."[346] APTS/PBS also points out that many translators are operated by universities and colleges that must work with their schools' budget cycle. It is important, APTS/PBS argues, to adopt a construction period that accommodates these unique circumstances.[347] KM argues that full-service stations have had a number of years to complete their DTV facilities and LPTV stations should not have to complete construction in a much shorter time period.[348] Commercial suggests that a standard three-year construction period be adopted because of possible bottlenecks that may arise with the manufacturing community and unforeseen circumstances that may arise.[349] Commercial suggests that on-channel digital

[341] CBA Reply Comments at 10.

[342] To prevent possible abuse by applicants, we will require that parties submitting a settlement agreement comply with the settlement limitations set forth in Section 311(c) of the Communications Act of 1934, as amended, and Section 73.3525 of the Commission's rules, including, *inter alia*, the reimbursement limitations.

[343] *See* 47 C.F.R. § 73.5002(d).

[344] *See Notice*, 18 FCC Rcd at 18410 *citing* 47 C.F.R. § 73.3598.

[345] *See* APTS/PBS Comments at 9; Joint Commenters Comments at 23; Parsons Comments at 15; San Bernardino County Comments at 3; KM Comments at 13; Commercial Reply Comments at 6-7.

[346] APTS/PBS Comments at 9.

[347] *Id.*

[348] KM Comments at 13.

[349] Commercial Reply Comments at 6-7.

conversions have no deadline other than the absolute end of the transition.[350]

170. Given the record support, we adopt the three-year construction period as proposed in the *Notice*. Once again, the grant of an application to modify construction permit will not extend the expiration date of the underlying construction period. We decline Commercial's suggestion that there should be no construction deadline for construction permits issued for on-channel digital conversions. We are not certain when the digital transition will be completed for stations in the low power television service. In order to prevent spectrum from laying fallow and to foster digital TV service to the public, we will require that all construction permits issued in the digital LPTV, TV translator and Class A services, including on-channel digital conversion construction permits, expire three years after their issuance.

171. As for requests to extend digital low power construction permits, we have two possibilities for processing these requests. We could adopt the "tolling" provisions for analog LPTV and TV translator construction permits.[351] Those provisions are strict and only permit extension of construction permits under very limited circumstances. On the other hand, we could adopt the separate extension provisions that were created for full-service DTV construction permits.[352] The Joint Commenters support this approach.[353] The full-service DTV extension provisions allow extension whenever the permittee is able to demonstrate that construction was delayed do to unforeseeable circumstances or circumstances beyond its control. If the permittee shows that it took all reasonable steps to overcome the delay expeditiously, an extension application is granted. In addition, permittees may demonstrate that they were unable to construct their digital facility because of financial hardship. Up to two extensions may be granted by the staff and further extensions must be acted upon by the Commission. Failure to justify an extension can result in the application of certain remedial measures.[354]

172. Because we anticipate that stations in the low power television service may find the DTV construction process very challenging, we adopt the full-service DTV construction permit extension procedures for the digital low power and Class A television services. This will allow those permittees that experience delays in construction or financial hardship the opportunity to justify an extension of their digital construction permit. At the conclusion of the three-year construction period, LPTV, TV translator, and Class A permittees may request an extension of no more than six months to complete construction of their digital facilities. We delegate to the Media Bureau the authority to grant or deny the first two applications for extension of the digital construction deadlines in the low power television and Class A services. Subsequent applications for extension must be referred to the Commission for action. We adopt the standard for extension currently set forth in the full-service television DTV extension rule.

6. Application Forms and Fees

173. We requested comment in the *Notice* on what fees should apply to digital LPTV and TV translator stations.[355] We proposed using the same application fees for analog and digital LPTV and TV translators for particular types of applications (*e.g.*, new and major change, minor change, and assignment

[350] Commercial Reply Comments at 7.

[351] *See* 47 C.F.R. § 73.3598(b).

[352] *See* 47 C.F.R. § 73.624(d)(3).

[353] Joint Commenters Comments at 23-24.

[354] *See Remedial Measures For Failure to Comply with Digital Television Construction Schedule*, 18 FCC Rcd 7174 (2003).

[355] *Notice*, 18 FCC Rcd at 18412.

and transfer). We asked how we should consider digital LPTV, and TV translator stations for purposes of regulatory fees assessed pursuant to Section 9 of the Communications Act.[356] The majority of commenters supported our approach.[357] The Joint Commenters asked that we adopt lower fees for digital LPTV, TV translator and Class A stations in rural areas by a factor of 50%.[358]

174. We will adopt the application fees for digital LPTV, TV translator and Class A stations applicable to analog stations.[359] LPTV and TV translator stations will file digital conversion applications and applications for digital companion channels on FCC Form 346. Class A stations will file digital conversion applications and digital companion channel applications on FCC Form 301-CA. In all cases, these applications will be filed as a minor change without an application filing fee (as is the case with analog minor change applications in these services).[360] The NTA supports this approach.[361] This approach is similar to the one that full-service television stations followed when they sought their paired digital channel.[362]

175. Applications for new or major change digital LPTV and TV translator stations will also be filed on FCC Form 346, will be treated as an application for a new station or major change, and will pay the standard application fee. Requests for Special Temporary Authority (STA), for extension of construction permit, for assignment or transfer of a digital-only station, for a station license and for renewal of license will be filed in the same manner as analog stations and will pay the same application fees for these filings.[363]

176. We reject the Joint Commenters' suggestion that we lower the application fees for stations in "rural areas."[364] The Joint Commenters do not offer any manner by which to define the term "rural areas" nor do they give any significant reason why these stations should be permitted to pay a significantly lower application fee. All applications require the same use of Commission resources and the application filing fees should be applied regardless of the location of the station.

177. With respect to regulatory fees, a decision will be made in the context of the Commission's annual regulatory fee rulemaking. However, we note that full-service television stations do not pay a separate regulatory fee for their paired digital channel and we will not, therefore, propose a separate regulatory fee for those stations in the low power television service that obtain a digital companion channel. In addition, we will propose that LPTV, TV translator and Class A stations that

[356] *Id. citing* 47 U.S.C. § 159.

[357] Entravision Comments at 9; APTS/PBS Comments at 12; NTA Comments at 28.

[358] Joint Commenters Comments at 25.

[359] Eligible noncommercial educational stations will continue to be exempt from application and regulatory fees. *See* 47 C.F.R. § 1.1162(e) and 47 U.S.C. § 159(h)(1).

[360] The Media Bureau will implement the necessary changes to all forms used in the low power television service for use with digital stations. Such changes will be announced in a subsequent Bureau Public Notice.

[361] NTA Comments at 28.

[362] *See Advanced Television Systems and Their Impact upon the Existing Television Broadcast* Service, 12 FCC Rcd 12809 (1997).

[363] As is the case with full-service television broadcasters' paired DTV channel, the low power broadcaster's companion digital channel will be considered part of its station's analog license and may not be separately assigned to a third party.

[364] *See* Joint Commenters Comments at 25.

choose to convert on-channel to digital (and have a single facility) should continue to pay the corresponding regulatory fee for their service.[365]

7. Ancillary and Supplementary Use Fees

178. Section 336(e) of the Communications Act requires that we collect a fee from digital stations that offer ancillary and supplementary services on a subscription basis.[366] In the *Notice* we noted that these fees relate to the DTV eligibility provisions given in Section 336(a) (*i.e.*, full-service DTV broadcasters).[367] We sought comment on whether to impose fees for ancillary and supplementary services provided by digital low power stations even if the fees are not statutorily required. We also asked what the basis should be for such fees, and we sought comment on whether to follow the approach applicable to full-service DTV broadcasters (*i.e.*, an annual fee in the amount of 5% of a station's gross revenue from feeable services). Alternatively, we asked if we should not levy such fees.

179. The majority of the commenters supported imposition of the 5% fee to digital LPTV stations that provide ancillary and supplementary services.[368] The CBA, APTS/PBS and Vermont Educational support the imposition of the 5% ancillary and supplementary fee.[369] The CBA states that Class A/LPTV stations should have the "same freedom as full power stations to offer ancillary services."[370] The CBA adds that "[T]he benefits to the public are the same, and revenue benefits accrue to both licensees and the government."[371] Bruno does not believe that stations should be required to pay the 5% fee until they reach a threshold of $3,000,000 gross sales per year.[372] Bruno states that this was determined by the Commission in the closed captioning rules to be a "reasonable threshold for station to be able to contribute to public interest funding requirements."[373]

180. We will apply annual fees for ancillary and supplementary services provided by digital LPTV and TV translator stations on a subscription basis. We will mirror the approach applicable to full-service DTV broadcasters, and we will impose an annual fee in the amount of 5% of a station's gross revenue from feeable services. This was the approach the Commission adopted when it concluded that Class A stations should be subject to the fee.[374] As the Commission stated in that proceeding, "this action furthers the Commission's goal of encouraging the transition of television broadcasting from analog to digital operation. By enabling Class A stations to generate additional revenues from ancillary or supplementary services, we seek to encourage the early conversion of Class A stations from analog to digital operation."

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[365] We note that Class A stations are treated as LPTV stations with respect to regulatory fees.

[366] *See* 47 U.S.C. § 336(e); *see also* 47 C.F.R. § 73.624(g).

[367] *Notice*, 18 FCC Rcd at 18412.

[368] Eagle mistakenly believes that we proposed that all digital Class A and LPTV stations be required to pay 5% of their yearly gross revenues to the Commission. *See* Eagle Comments at 1. We only proposed that stations providing ancillary and supplementary services on a subscription basis pay a fee equal to 5% of the gross revenues derived from such services.

[369] CBA Reply Comments at 11; APTS/PBS Comments at 10; Vermont Educational Comments at 3.

[370] CBA Reply Comments at 11.

[371] *Id.*

[372] Bruno Comments at 8.

[373] *Id.*

[374] *See Establishment of Class A Television* Service, 16 FCC Rcd 8244, 8258 (2001).